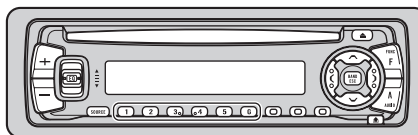


Service Manual

Pioneer

DEH-P410/X1N/UC



ORDER NO.
CRT2414

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-P410

X1N/UC

DEH-P4100

X1N/UC

DEH-P310

X1N/UC



● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-958	CRT2423	S8.1	CD Mech. Module:Circuit Description, Mech.Description, Disassembly

CONTENTS

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PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

● CD Player Service Precautions

1. For pickup unit(CXX1285) handling, please refer to "Disassembly"(see page 66).

During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).

2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.

3. Please checking the grating after changing the service pickup unit(see page 58).

1. SAFETY INFORMATION

CAUTION

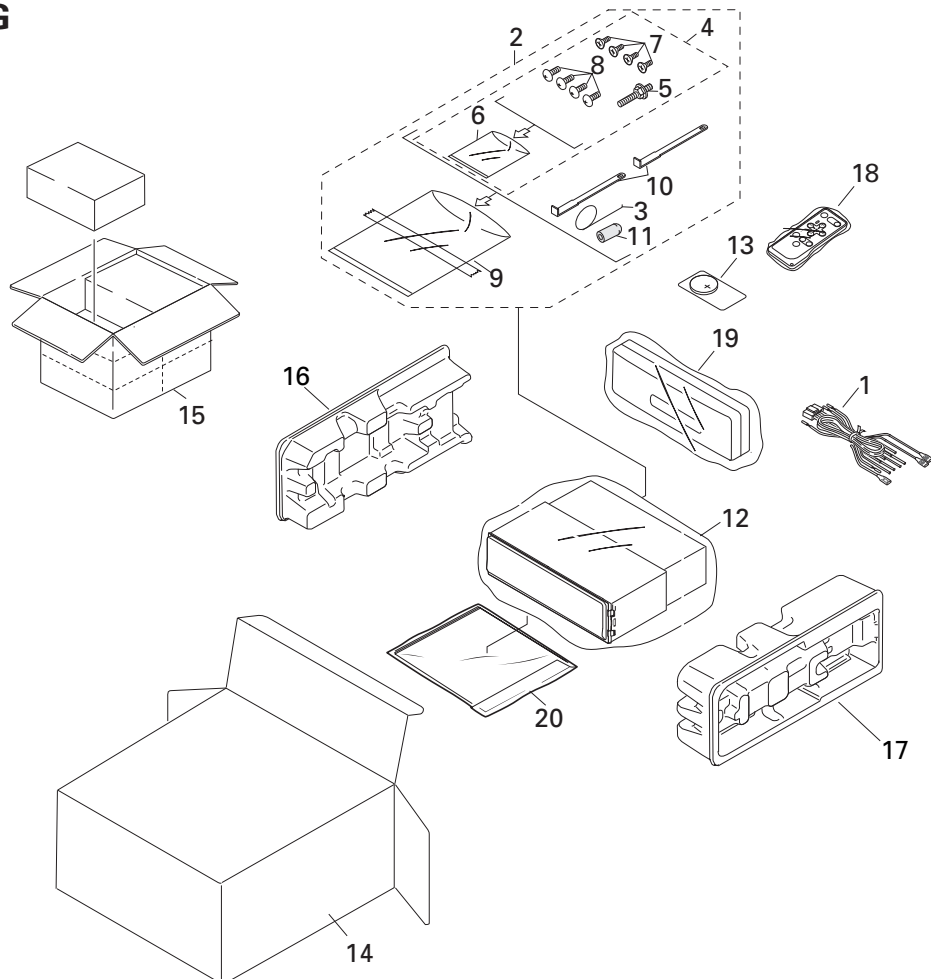
This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

(1) PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
	1 Cord Assy	CDE6234	16	Protector	CHP2251
*	2 Accessory Assy	CEA2395	17	Protector	CHP2252
	3 Spring	CBH1650	18	Remote Control Unit	See Contrast table(2)
	4 Screw Assy	CEA2396	19	Case Assy	CXB3520
	5 Screw	CBA1002	20-1	Owner's Manual	See Contrast table(2)
*	6 Polyethylene Bag	CEG-127	* 20-2	Label	CRW1343
	7 Screw	CRZ50P090FMC	20-3	Installation Manual	See Contrast table(2)
	8 Screw	TRZ50P080FMC	* 20-4	Warranty Card	See Contrast table(2)
*	9 Polyethylene Bag	CEG-158	20-5	Polyethylene Bag	CEG1116
	10 Handle	CNC5395	* 20-6	Card	See Contrast table(2)
	11 Bush	CNV3930			
	12 Polyethylene Bag	CEG1173			
	13 Battery	See Contrast table(2)			
	14 Carton	See Contrast table(2)			
	15 Contain Box	See Contrast table(2)			

(2) CONTRAST TABLE

DEH-P410/X1N/UC, DEH-P4100/X1N/UC and DEH-P310/X1N/UC are constructed the same except for the following:

Mark No.	Symbol and Description	Part No.		
		DEH-P410/X1N/UC	DEH-P4100/X1N/UC	DEH-P310/X1N/UC
13	Battery	CEX1030	CEX1030	Not used
14	Carton	CHG3875	CHG3874	CHG3880
15	Contain Box	CHL3875	CHL3874	CHL3880
18	Remote Control Unit	CXB4285	CXB4285	Not used
20-1	Owner's Manual	CRD3065	CRD3062	CRD3065
20-3	Installation Manual	CRD3066	CRD3064	CRD3067
* 20-4	Warranty Card	CRY1070	Not used	CRY1070
* 20-6	Card	Not used	ARY1048	Not used

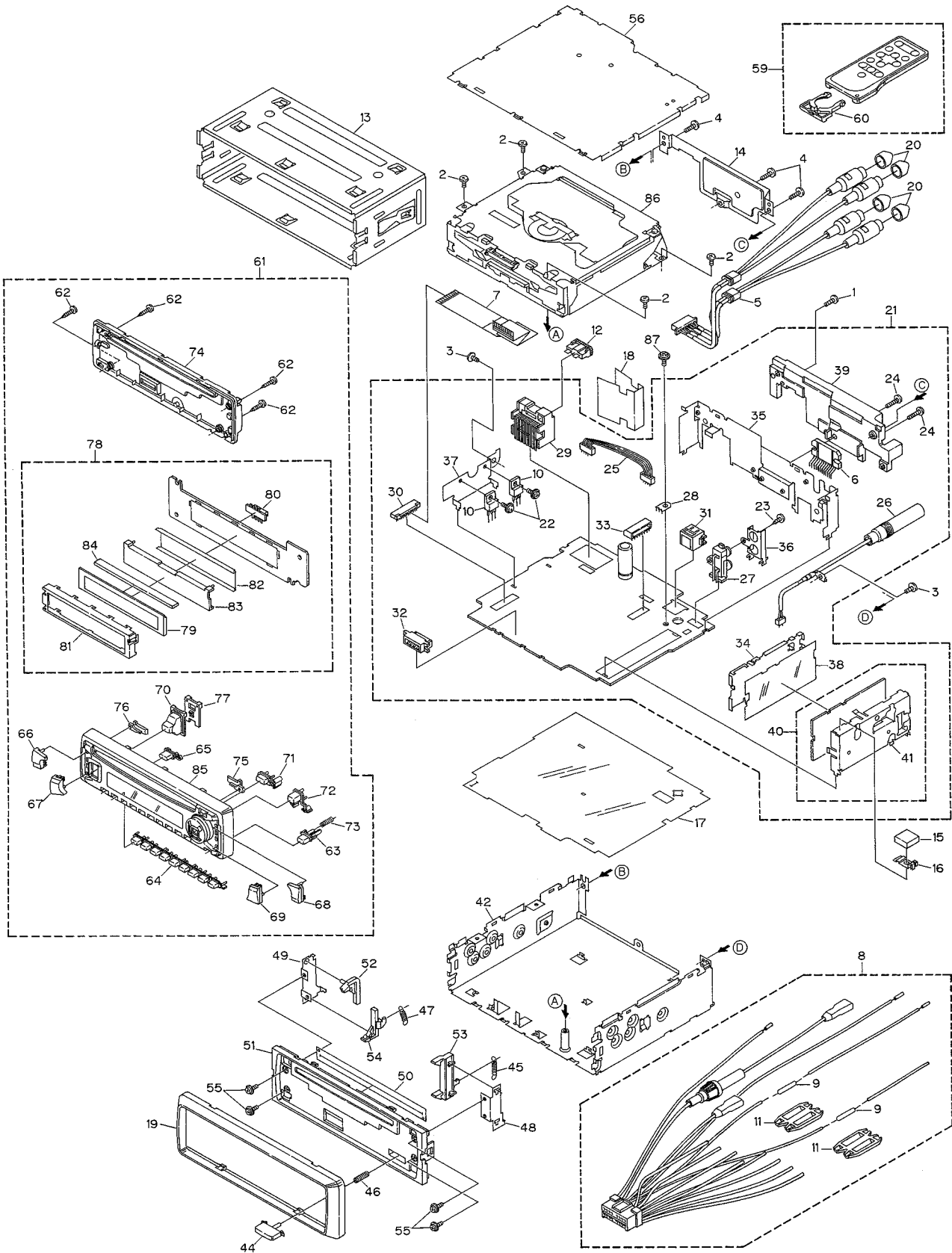
● Owner's Manual

Model	Part No.	Language
DEH-P410/X1N/UC	CRD3065	English, French
DEH-P4100/X1N/UC	CRD3062	English, French
DEH-P310/X1N/UC	CRD3065	English, French

● Installation Manual

Model	Part No.	Language
DEH-P410/X1N/UC	CRD3066	English, French
DEH-P4100/X1N/UC	CRD3064	English, French
DEH-P310/X1N/UC	CRD3067	English, French

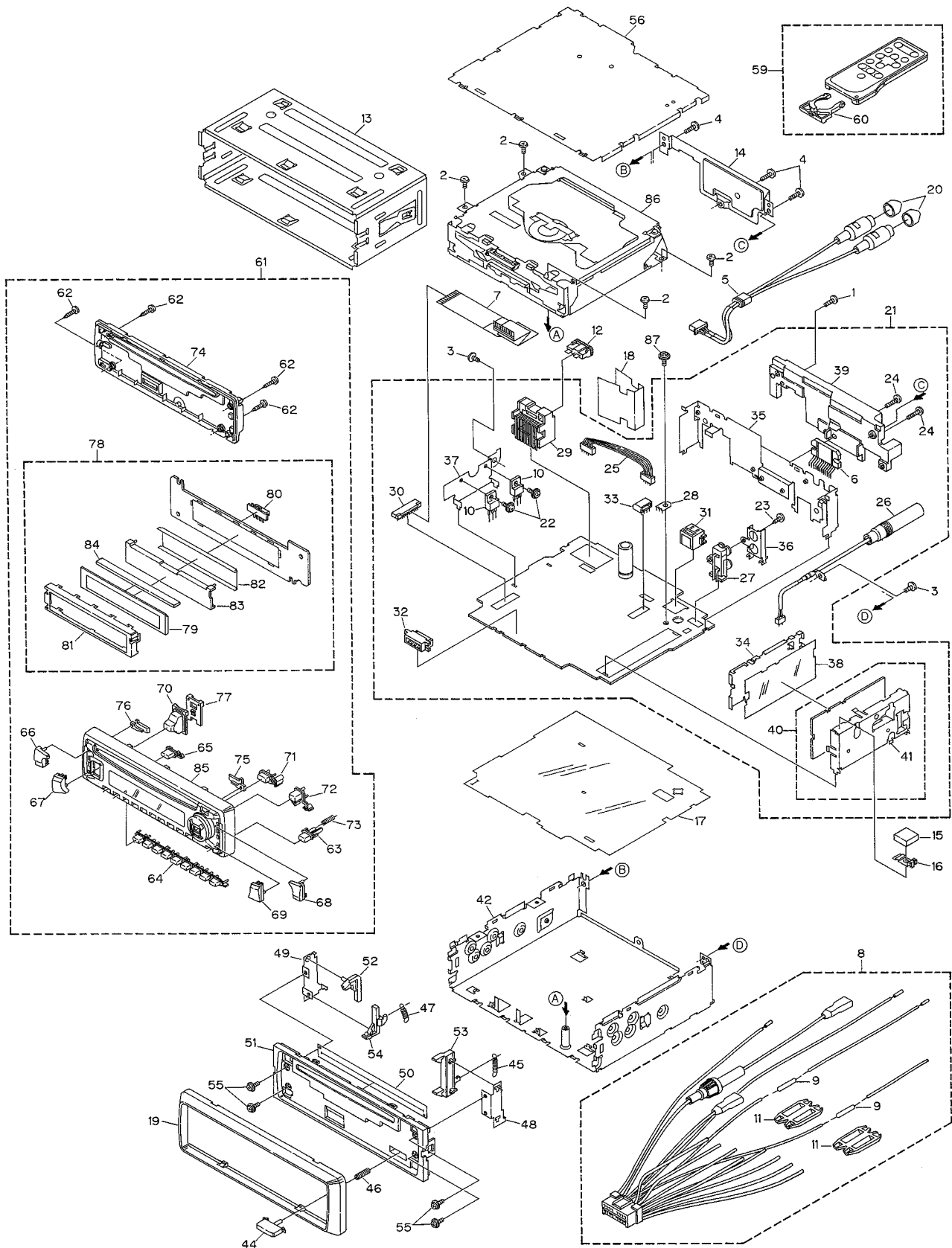
2.2 EXTERIOR(DEH-P410/X1N/UC)



● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BMZ26P120FMC	46	Spring	CBH2367
2	Screw	BSZ26P060FMC	47	Spring	CBH2208
3	Screw	BSZ30P060FMC	48	Bracket	CNC6791
4	Screw	BSZ30P120FMC	49	Holder	CNC8042
5	Cord Assy	CDE5771	50	Cover	CNM6276
6	IC(IC551)	PAL005A	51	Panel	CNS5189
7	Cable	CDE6160	52	Arm	CNV4692
8	Cord Assy	CDE6234	53	Arm	CNV4728
9	Resistor	RS1/2PMF102J	54	Arm	CNV5576
10	Transistor(Q981,991)	2SD2396	55	Screw	IMS20P030FZK
11	Cap	CNS1472	56	Case Unit	CXB4033
12	Fuse(10A)	CEK1136	57	.....	
13	Holder	CNC6798	58	.....	
14	Cover	CNC8367	59	Remote Control Unit	CXB4285
15	Spacer	CNM4913	60	Cover	CNS4948
16	Earth Plate	CNC8368	61	Detach Grille Assy	CXB4715
17	Insulator	CNM6006	62	Screw	BPZ20P100FZK
18	Insulator	CNM6224	63	Button(DETACH)	CAC5789
19	Panel	CNS5137	64	Button(1-6)	CAC6239
20	Cap	CNV2680	65	Button(SOURCE)	CAC6241
21	Tuner Amp Unit	CWM6835	66	Button(+)	CAC6242
22	Screw	ASZ26P080FMC	67	Button(-)	CAC6243
23	Screw	BPZ26P080FMC	68	Button(F)	CAC6244
24	Screw	BSZ26P160FMC	69	Button(A)	CAC6245
25	Connector(CN551)	CDE5996	70	Button(EQ)	CAC6247
26	Antenna Cable(CN502)	CDH1254	71	Button(EJECT)	CAC6248
27	Pin Jack(CN431)	CKB1028	72	Button(BAND)	CAC6249
28	Terminal(CN501)	CKF1059	73	Spring	CBH2210
29	Connector(CN951)	CKM1299	74	Cover	CNS5622
* 30	Connector(CN681)	CKS2227	75	Lighting Conductor	CNV5909
31	Connector(CN411)	CKS3408	76	Lighting Conductor	CNV5910
32	Connector(CN651)	CKS3581	77	Housing	CNV5918
33	Connector(CN433)	CKS3602	78	Keyboard Unit	CWM6793
34	Holder	CNC7533	79	LCD	CAW1561
35	Holder	CNC8037	80	Connector(CN1801)	CKS3580
36	Holder	CNC8041	81	Holder	CNC8468
37	Holder	CNC8043	82	Sheet	CNM6435
38	Insulator	CNM5967	83	Lighting Conductor	CNV5908
39	Heat Sink	CNR1506	84	Connector	CNV6051
40	FM/AM Tuner Unit	CWE1501	85	Grille Sub Assy	CXB5244
41	Holder	CNC7532	86	CD Mechanism Module(S8.1)	CXK5201
42	Chassis Unit	CXB3167	87	Screw	ISS26P055FUC
43	.....				
44	Button	CAC4836			
45	Spring	CBH1835			

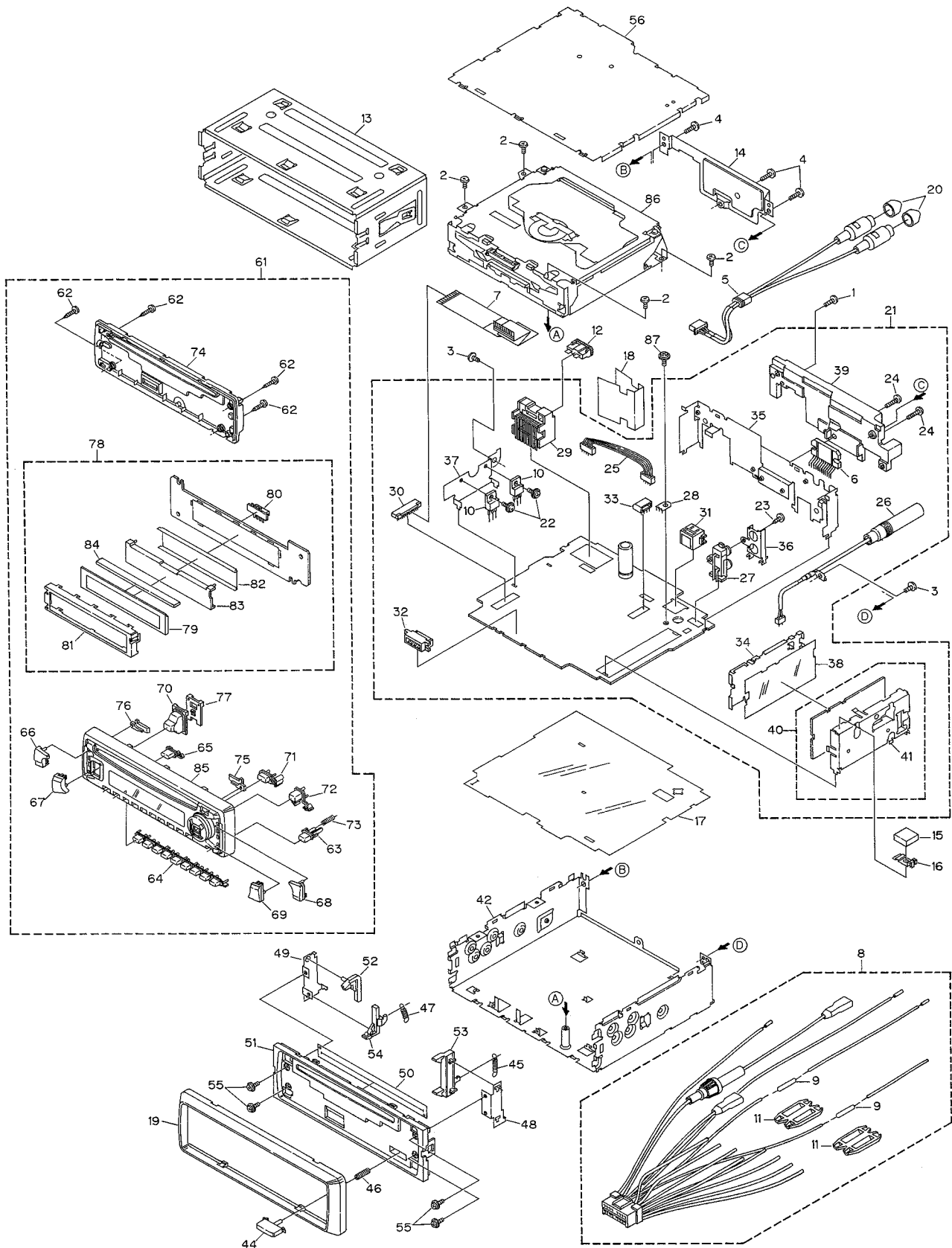
2.3 EXTERIOR(DEH-P4100/X1N/UC)



● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BMZ26P120FMC	46	Spring	CBH2367
2	Screw	BSZ26P060FMC	47	Spring	CBH2208
3	Screw	BSZ30P060FMC	48	Bracket	CNC6791
4	Screw	BSZ30P120FMC	49	Holder	CNC8042
5	Cord Assy	CDE5770	50	Cover	CNM6276
6	IC(IC551)	PAL005A	51	Panel	CNS5189
7	Cable	CDE6160	52	Arm	CNV4692
8	Cord Assy	CDE6234	53	Arm	CNV4728
9	Resistor	RS1/2PMF102J	54	Arm	CNV5576
10	Transistor(Q981,991)	2SD2396	55	Screw	IMS20P030FZK
11	Cap	CNS1472	56	Case Unit	CXB4033
12	Fuse(10A)	CEK1136	57	.....	
13	Holder	CNC6798	58	.....	
14	Cover	CNC8367	59	Remote Control Unit	CXB4285
15	Spacer	CNM4913	60	Cover	CNS4948
16	Earth Plate	CNC8368	61	Detach Grille Assy	CXB4714
17	Insulator	CNM6006	62	Screw	BPZ20P100FZK
18	Insulator	CNM6224	63	Button(DETACH)	CAC5789
19	Panel	CNS5137	64	Button(1-6)	CAC6239
20	Cap	CNV2680	65	Button(SOURCE)	CAC6241
21	Tuner Amp Unit	CWM6834	66	Button(+)	CAC6242
22	Screw	ASZ26P080FMC	67	Button(-)	CAC6243
23	Screw	BPZ26P080FMC	68	Button(F)	CAC6244
24	Screw	BSZ26P160FMC	69	Button(A)	CAC6245
25	Connector(CN551)	CDE5996	70	Button(EQ)	CAC6247
26	Antenna Cable(CN502)	CDH1254	71	Button(EJECT)	CAC6248
27	Pin Jack(CN431)	CKB1028	72	Button(BAND)	CAC6249
28	Terminal(CN501)	CKF1059	73	Spring	CBH2210
29	Connector(CN951)	CKM1299	74	Cover	CNS5622
* 30	Connector(CN681)	CKS2227	75	Lighting Conductor	CNV5909
31	Connector(CN411)	CKS3408	76	Lighting Conductor	CNV5910
32	Connector(CN651)	CKS3581	77	Housing	CNV5918
33	Connector(CN432)	CKS3598	78	Keyboard Unit	CWM6793
34	Holder	CNC7533	79	LCD	CAW1561
35	Holder	CNC8038	80	Connector(CN1801)	CKS3580
36	Holder	CNC8041	81	Holder	CNC8468
37	Holder	CNC8043	82	Sheet	CNM6435
38	Insulator	CNM5967	83	Lighting Conductor	CNV5908
39	Heat Sink	CNR1506	84	Connector	CNV6051
40	FM/AM Tuner Unit	CWE1501	85	Grille Sub Assy	CXB5243
41	Holder	CNC7532	86	CD Mechanism Module(S8.1)	CXK5201
42	Chassis Unit	CXB3167	87	Screw	ISS26P055FUC
43	.....				
44	Button	CAC4836			
45	Spring	CBH1835			

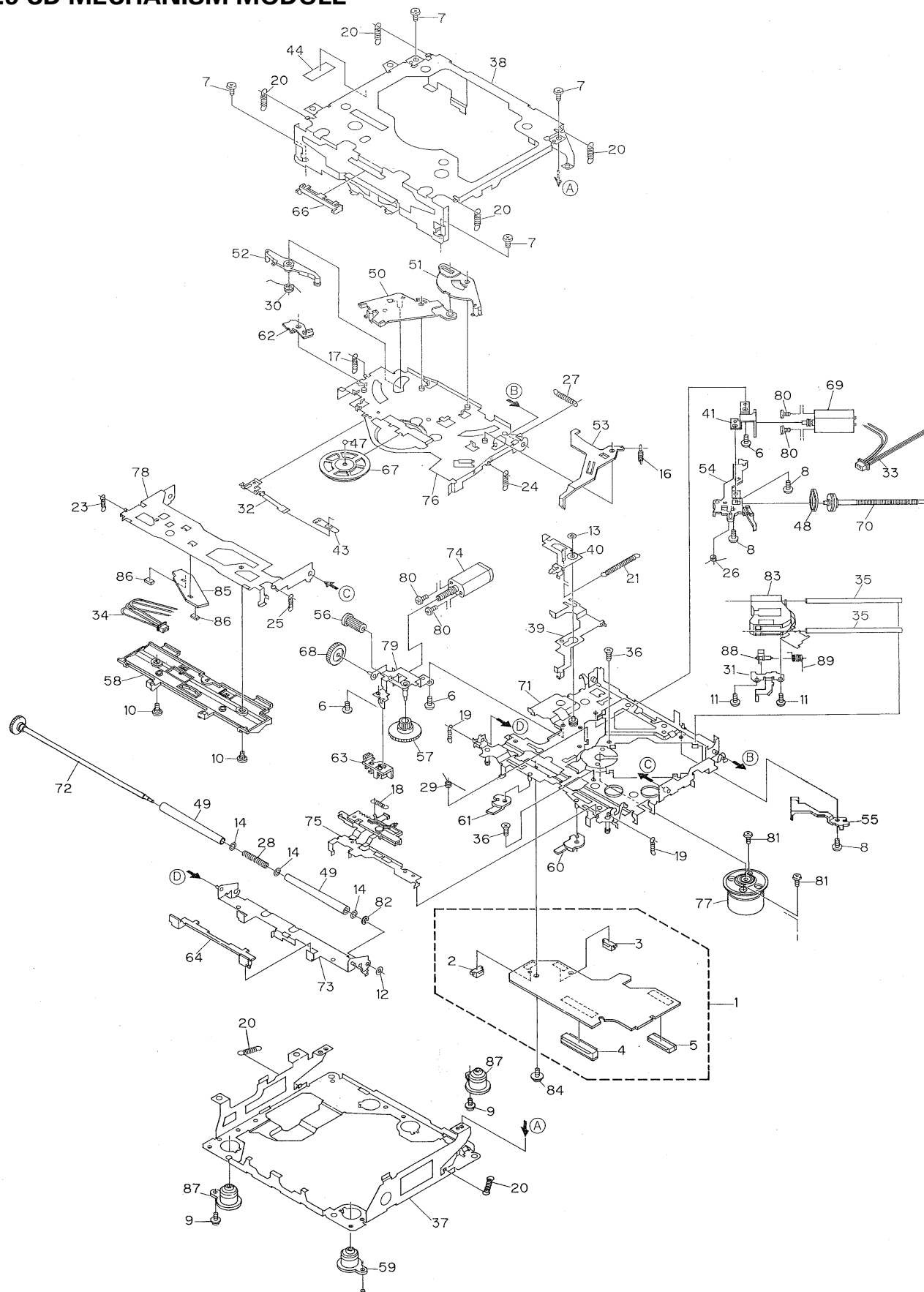
2.4 EXTERIOR(DEH-P310/X1N/UC)



● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BMZ26P120FMC	46	Spring	CBH2367
2	Screw	BSZ26P060FMC	47	Spring	CBH2208
3	Screw	BSZ30P060FMC	48	Bracket	CNC6791
4	Screw	BSZ30P120FMC	49	Holder	CNC8042
5	Cord Assy	CDE5770	50	Cover	CNM6276
6	IC(IC551)	PAL005A	51	Panel	CNS5189
7	Cable	CDE6160	52	Arm	CNV4692
8	Cord Assy	CDE6234	53	Arm	CNV4728
9	Resistor	RS1/2PMF102J	54	Arm	CNV5576
10	Transistor(Q981,991)	2SD2396	55	Screw	IMS20P030FZK
11	Cap	CNS1472	56	Case Unit	CXB4033
12	Fuse(10A)	CEK1136	57	.....	
13	Holder	CNC6798	58	.....	
14	Cover	CNC8367	59	.....	
15	Spacer	CNM4913	60	.....	
16	Earth Plate	CNC8368	61	Detach Grille Assy	CXB4719
17	Insulator	CNM6006	62	Screw	BPZ20P100FZK
18	Insulator	CNM6224	63	Button(DETACH)	CAC5789
19	Panel	CNS5132	64	Button(1-6)	CAC6239
20	Cap	CNV2680	65	Button(SOURCE)	CAC6241
21	Tuner Amp Unit	CWM6834	66	Button(+)	CAC6242
22	Screw	ASZ26P080FMC	67	Button(-)	CAC6243
23	Screw	BPZ26P080FMC	68	Button(F)	CAC6244
24	Screw	BSZ26P160FMC	69	Button(A)	CAC6245
25	Connector(CN551)	CDE5996	70	Button(EQ)	CAC6247
26	Antenna Cable(CN502)	CDH1254	71	Button(EJECT)	CAC6248
27	Pin Jack(CN431)	CKB1028	72	Button(BAND)	CAC6249
28	Terminal(CN501)	CKF1059	73	Spring	CBH2210
29	Connector(CN951)	CKM1299	74	Cover	CNS5622
* 30	Connector(CN681)	CKS2227	75	Lighting Conductor	CNV5909
31	Connector(CN411)	CKS3408	76	Lighting Conductor	CNV5910
32	Connector(CN651)	CKS3581	77	Housing	CNV5918
33	Connector(CN432)	CKS3598	78	Keyboard Unit	CWM6794
34	Holder	CNC7533	79	LCD	CAW1571
35	Holder	CNC8038	80	Connector(CN1801)	CKS3580
36	Holder	CNC8041	81	Holder	CNC8468
37	Holder	CNC8043	82	Sheet	CNM6435
38	Insulator	CNM5967	83	Lighting Conductor	CNV5908
39	Heat Sink	CNR1506	84	Connector	CNV6051
40	FM/AM Tuner Unit	CWE1501	85	Grille Sub Assy	CXB5248
41	Holder	CNC7532	86	CD Mechanism Module(S8.1)	CXK5201
42	Chassis Unit	CXB3167	87	Screw	ISS26P055FUC
43	.....				
44	Button	CAC4836			
45	Spring	CBH1835			

2.5 CD MECHANISM MODULE



● CD MECHANISM MODULE SECTION PARTS LIST

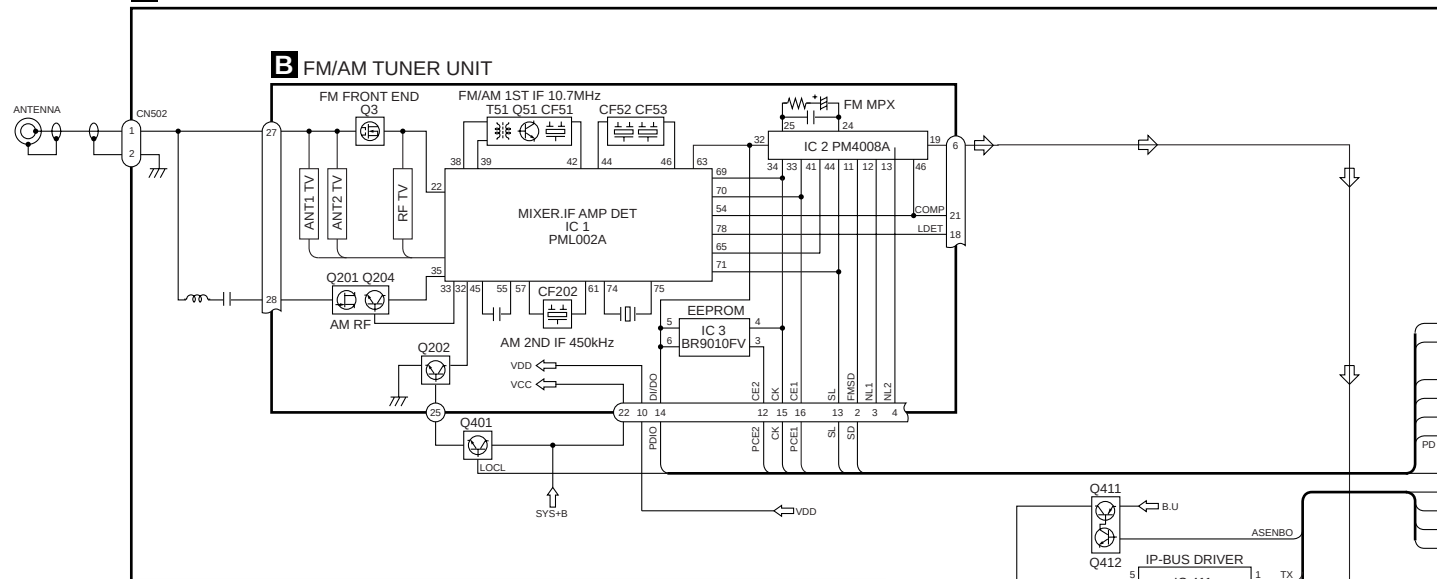
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Control Unit	CWX2411	46	*****	
2	Connector(CN802)	CKS2192	47	Ball	CNR1189
3	Connector(CN801)	CKS2193	48	Belt	CNT1086
4	Connector(CN701)	CKS2773	49	Roller	CNV4509
5	Connector(CN101)	CKS3486	50	Arm	CNV6037
6	Screw	BMZ20P030FMC	51	Arm	CNV5247
7	Screw	BSZ20P040FMC	52	Arm	CNV5248
8	Screw(M2x3)	CBA1077	53	Arm	CNV5249
9	Screw(M2x5)	EBA1028	54	Guide	CNV5254
10	Screw	CBA1243	55	Guide	CNV5255
11	Screw(M2x4)	CBA1362	56	Gear	CNV5257
12	Washer	CBF1037	57	Gear	CNV5256
13	Washer	CBF1038	58	Guide	CNV6176
14	Washer	CBF1060	59	Damper	CNV6010
15	*****		60	Arm	CNV6096
16	Spring	CBH2079	61	Arm	CNV6031
17	Spring	CBH2117	62	Arm	CNV6211
18	Spring	CBH2314	63	Guide	CNV6012
19	Spring	CBH2110	64	Guide	CNV5510
20	Spring	CBH2282	65	*****	
21	Spring	CBH2318	66	Guide	CNV5751
22	*****		67	Clamper	CNV6013
23	Spring	CBH2324	68	Gear	CNV5813
24	Spring	CBH2118	69	Motor Unit(M1)	CXB2190
25	Spring	CBH2161	70	Screw Unit	CXB4726
26	Spring	CBH2163	71	Chassis Unit	CXB4797
27	Spring	CBH2189	72	Gear Unit	CXB4728
28	Spring	CBH2249	73	Arm Unit	CXB5753
29	Spring	CBH2260	74	Motor Unit(M2)	CXB2195
30	Spring	CBH2262	75	Lever Unit	CXB4730
31	Bracket	CNC8568	76	Arm Unit	CXB4731
32	Spring	CBL1369	77	Motor Unit(M3)	CXB2562
33	Connector	CDE5531	78	Arm Unit	CXB4732
34	Connector	CDE5532	79	Bracket Unit	CXB4795
35	Shaft	CLA3304	80	Screw	JFZ20P025FMC
36	Screw(M2.6x6)	CBA1458	81	Screw	JGZ17P025FZK
37	Frame	CNC8565	82	Washer	YE20FUC
38	Frame	CNC8749	83	Pickup Unit(Service)(P8)	CXX1285
39	Lever	CNC7546	84	Screw	IMS26P030FMC
40	Arm	CNC8663	* 85	PCB	CNX2982
41	Bracket	CNC8567	86	Photo-transistor(Q1, 2)	CPT230SX-TU
42	*****		87	Damper	CNV6011
43	Spacer	CNM3315	88	Lack	CNV6014
44	Sheet	CNM6659	89	Spring	CBH2315
45	*****				

DEH-P410,P4100,P310

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

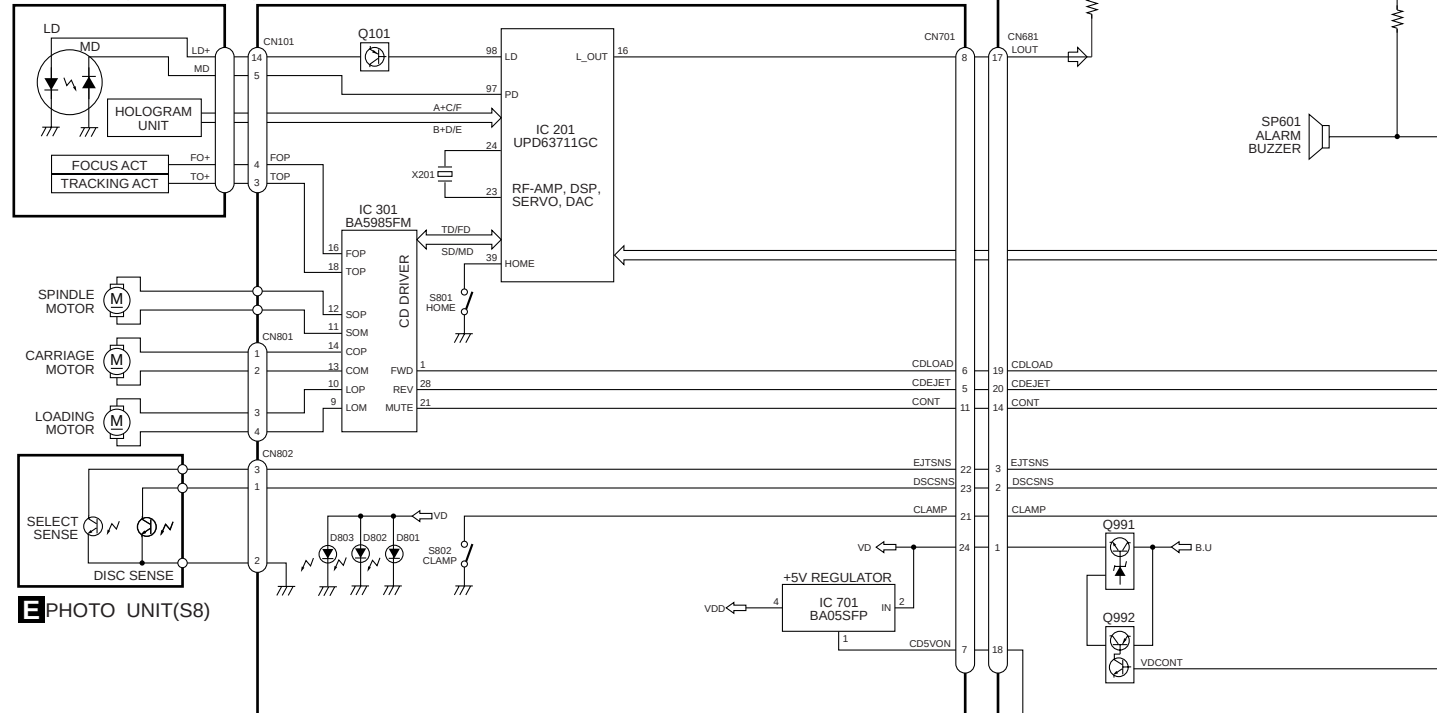
3.1 BLOCK DIAGRAM(DEH-P410/X1N/UC)

A TUNER AMP UNIT

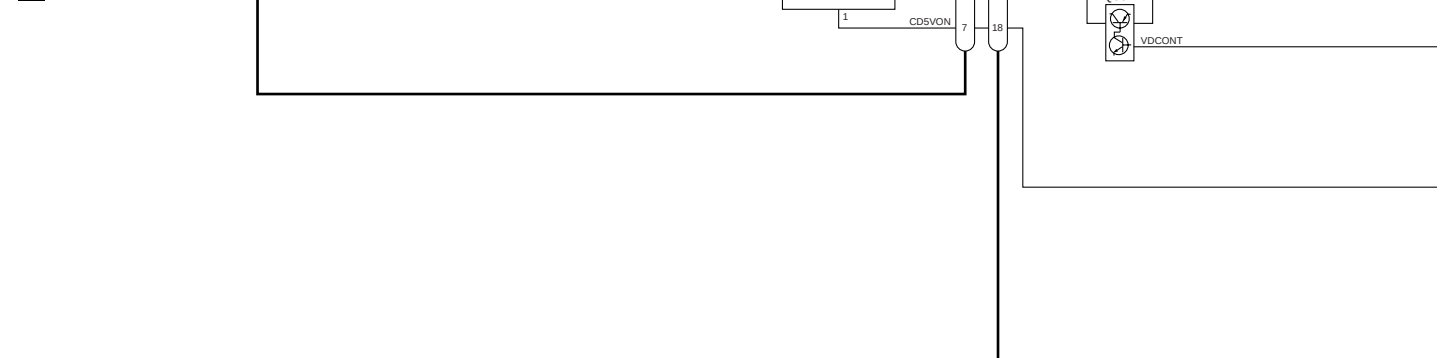


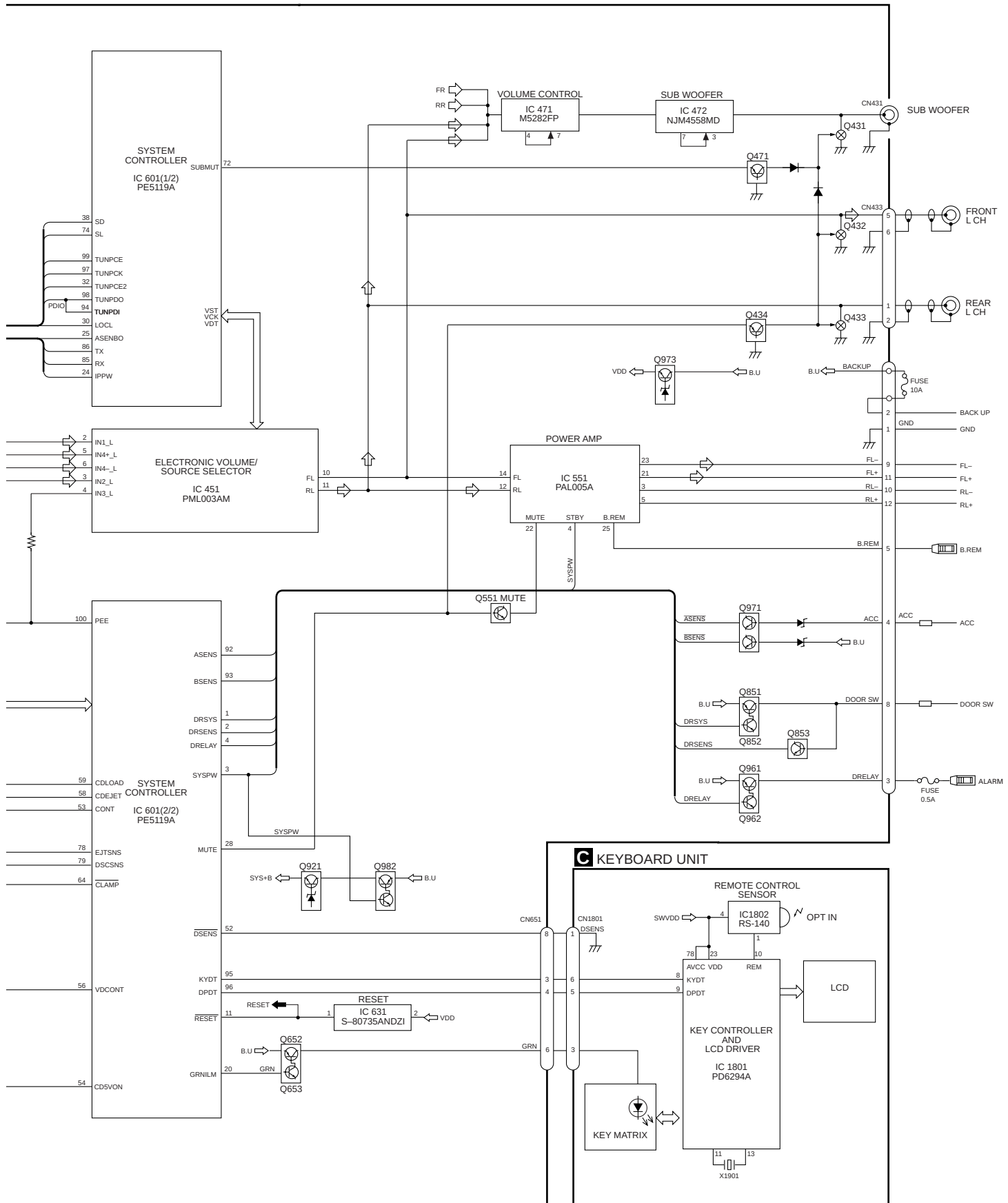
PICKUP UNIT(SERVICE)(P8)

D CONTROL UNIT



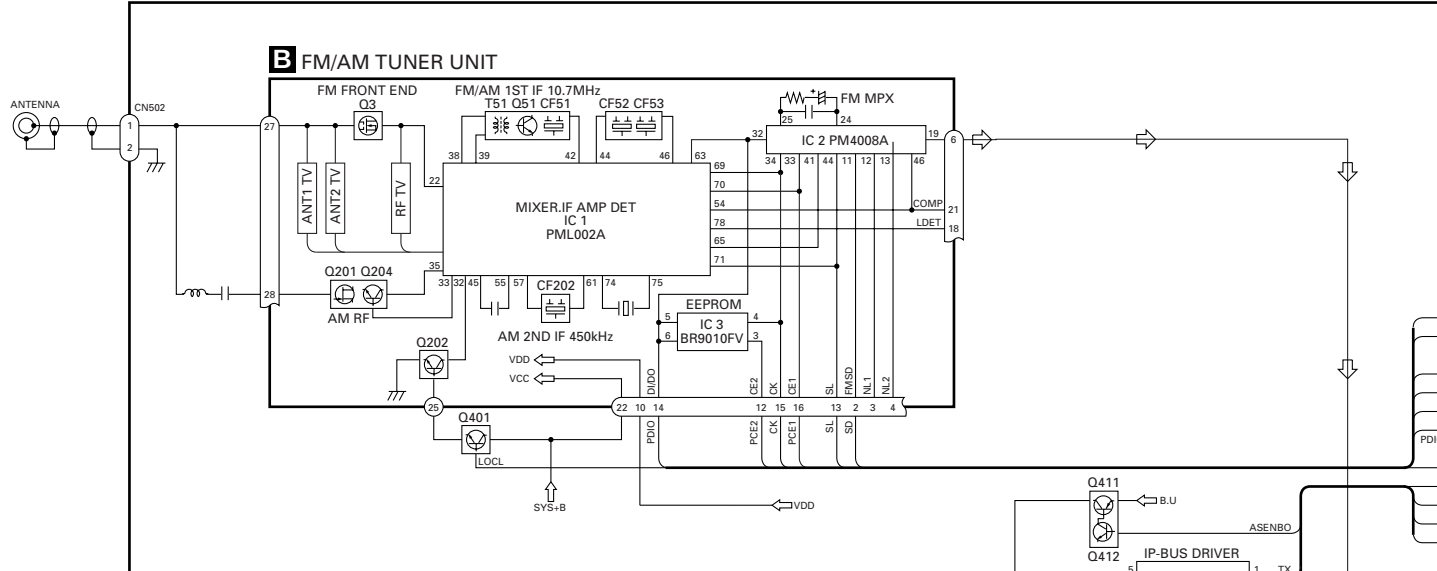
E PHOTO UNIT(S8)



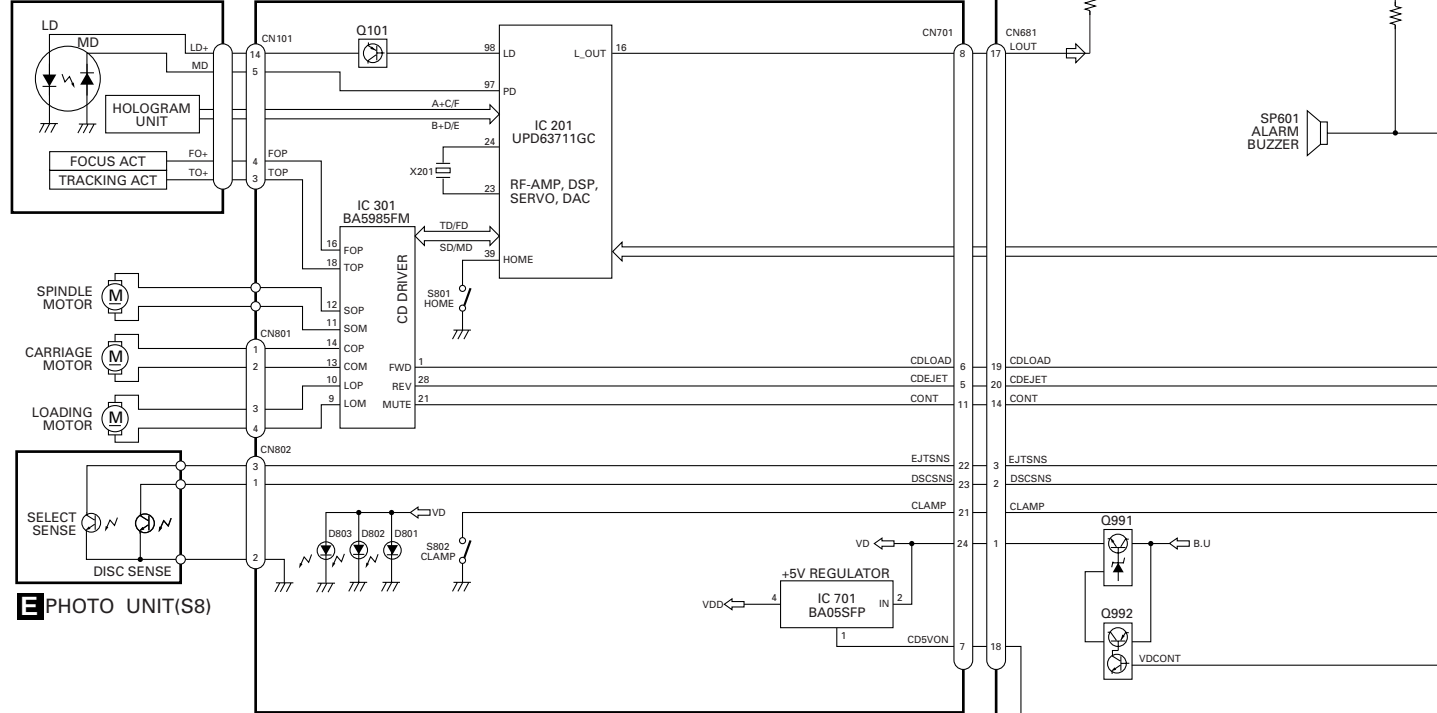


3.2 BLOCK DIAGRAM(DEH-P4100/X1N/UC, DEH-P310/X1N/UC)

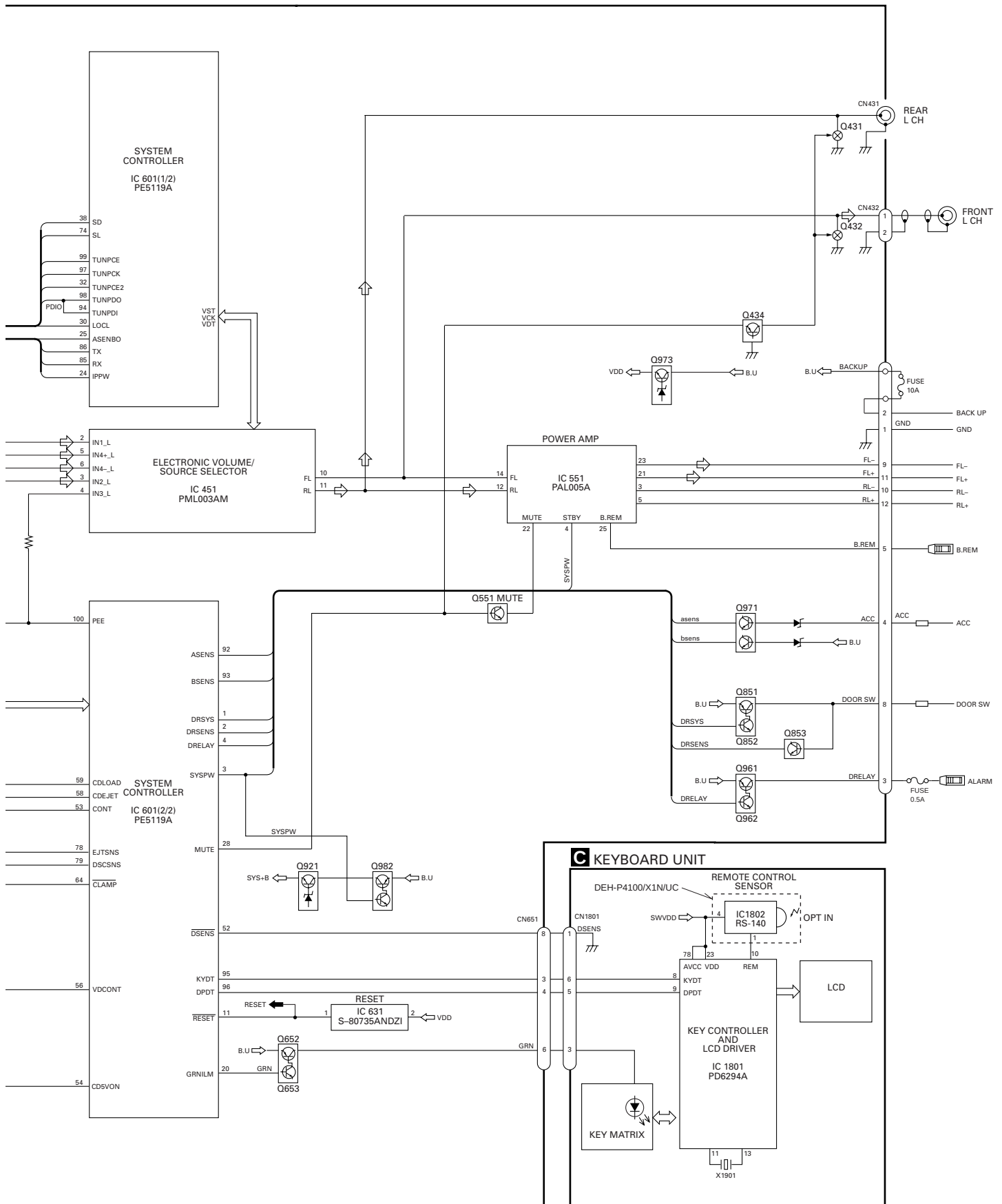
A TUNER AMP UNIT



PICKUP UNIT(SERVICE)(P8) **D CONTROL UNIT**



E PHOTO UNIT(S8)

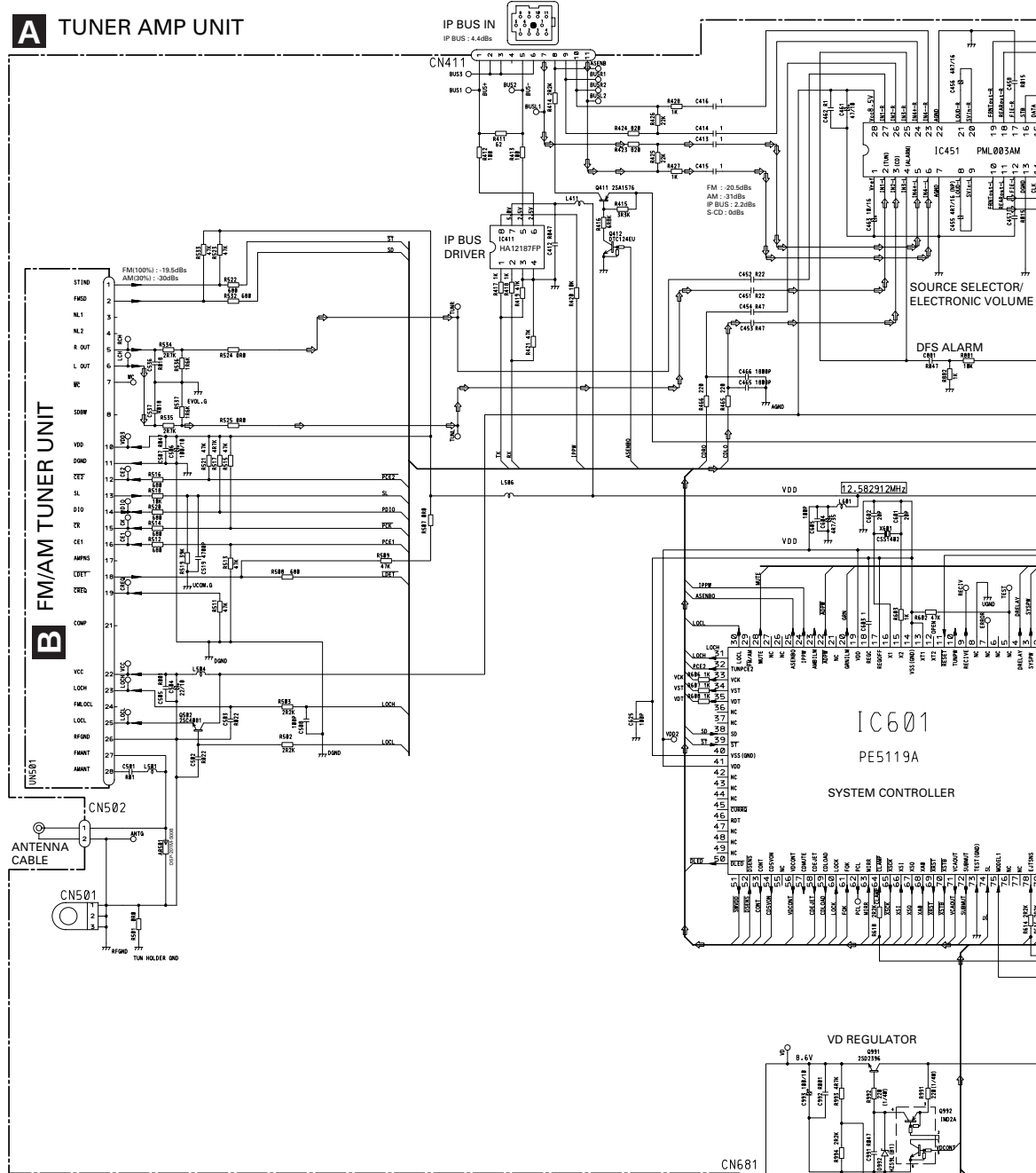


3.3 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)(DEH-P410/X1N/UC)

Note: When ordering service parts, be sure to refer to “EXPLODED VIEWS AND PARTS LIST” or “ELECTRICAL PARTS LIST”.

A-a

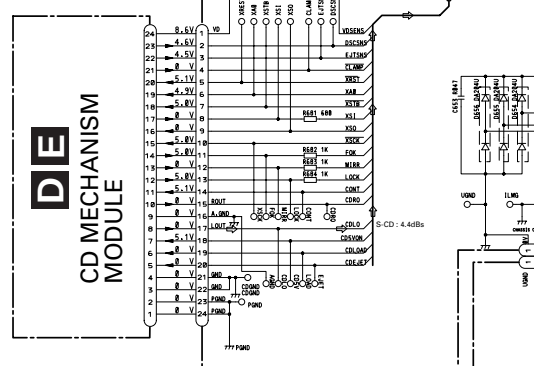
A TUNER AMP UNIT



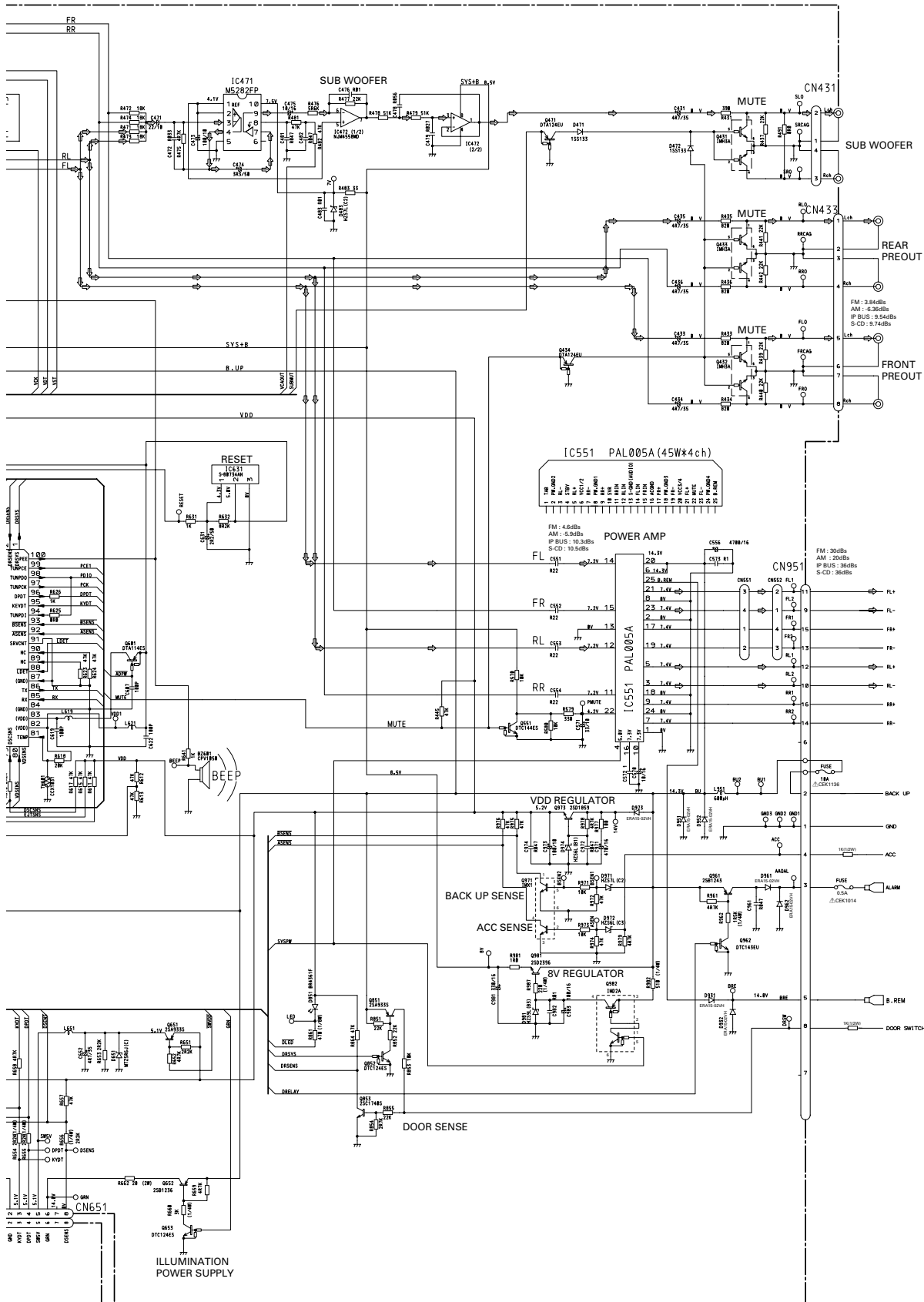
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
—H— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The Δ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.

Decimal points for resistor and capacitor fixed values are expressed as :
2.2 → 2R2
0.022 → R022

DE CD MECHANISM MODULE



A-b



C KEYBOARD UNIT

A

TUNER AMP UNIT

FM/AM TUNER UNIT

IP BUS IN

IP BUS : 4.4dBs

IP BUS DRIVER

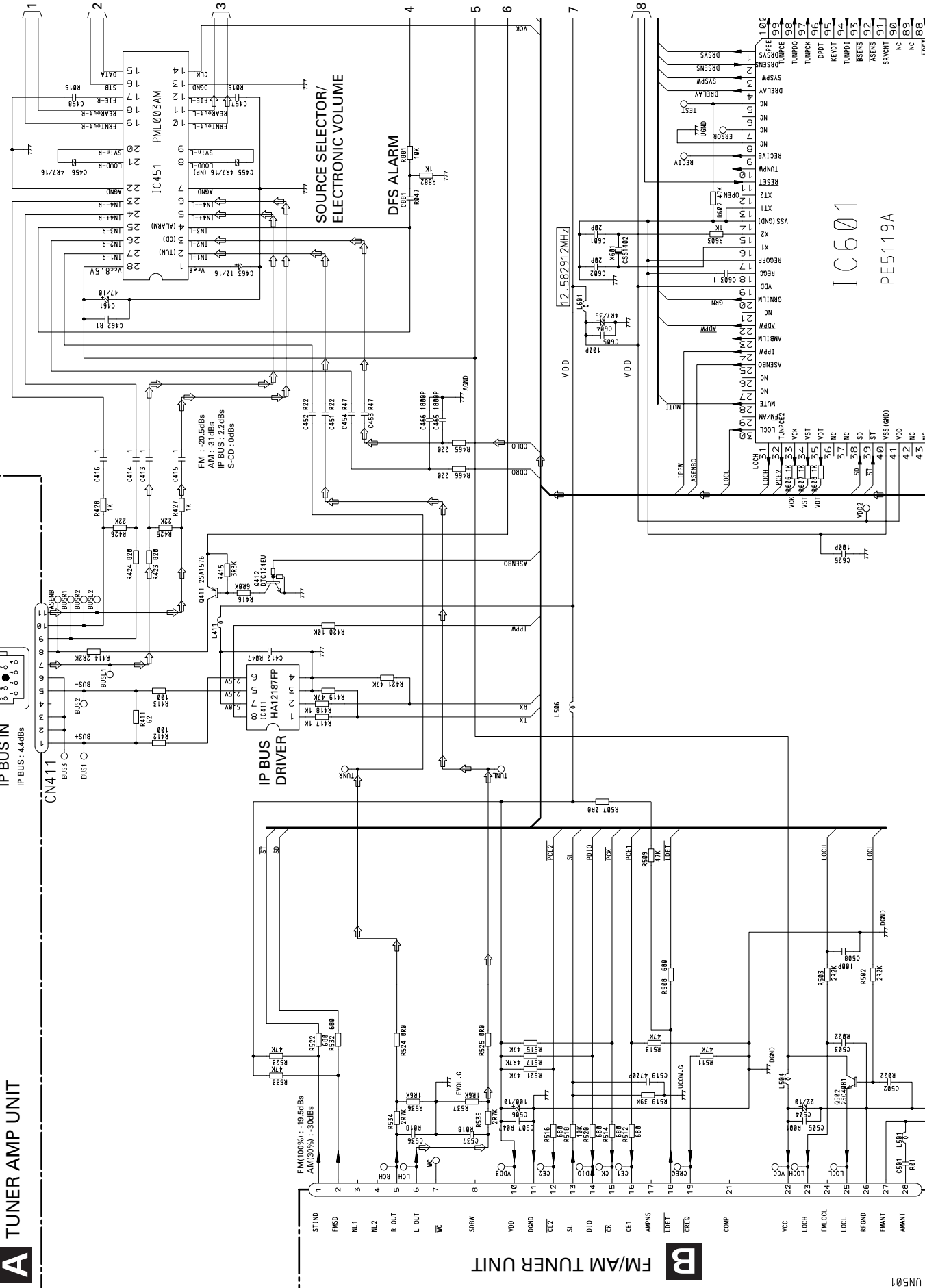
FM : 20.5dBs
AM : 31dBs
IP BUS : 2.2dBs
S-CD : 0dBs

SOURCE SELECTOR/
ELECTRONIC VOLUME

DFS ALARM

IC601

PE5119A



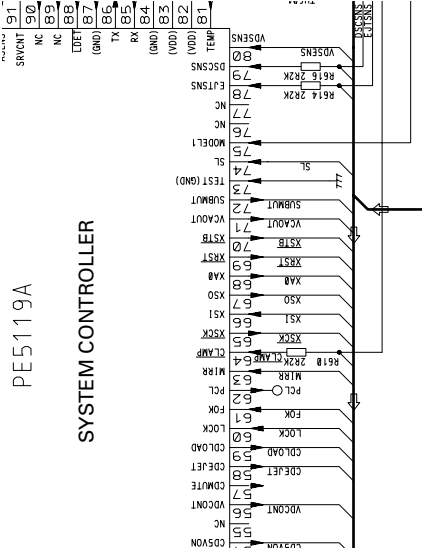
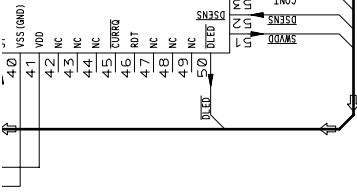
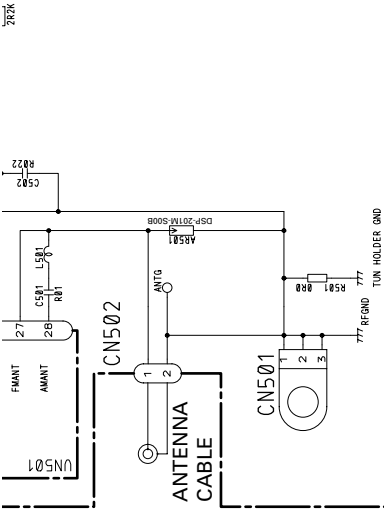
A-a

A

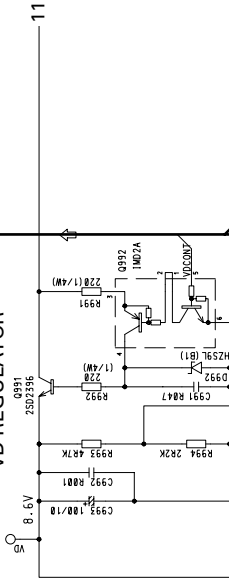
B

C

D



VD REGULATOR

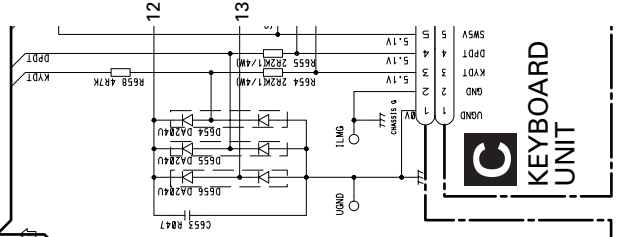
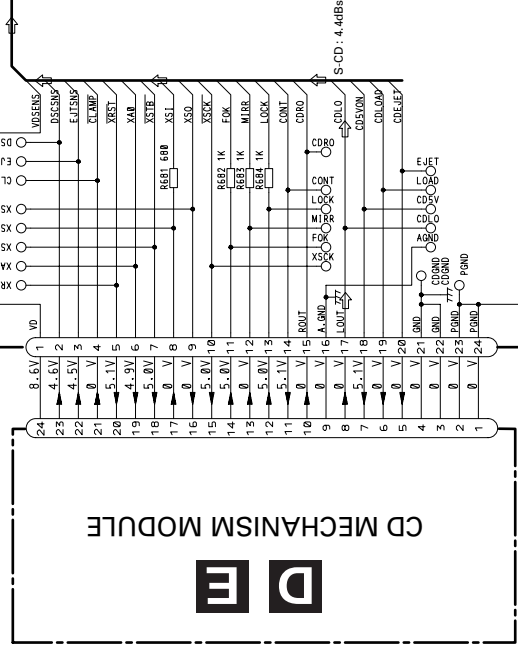


NOTE :

- Symbol indicates a resistor.
- No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
- No differentiation is made between chip capacitors and discrete capacitors.

The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

CN581

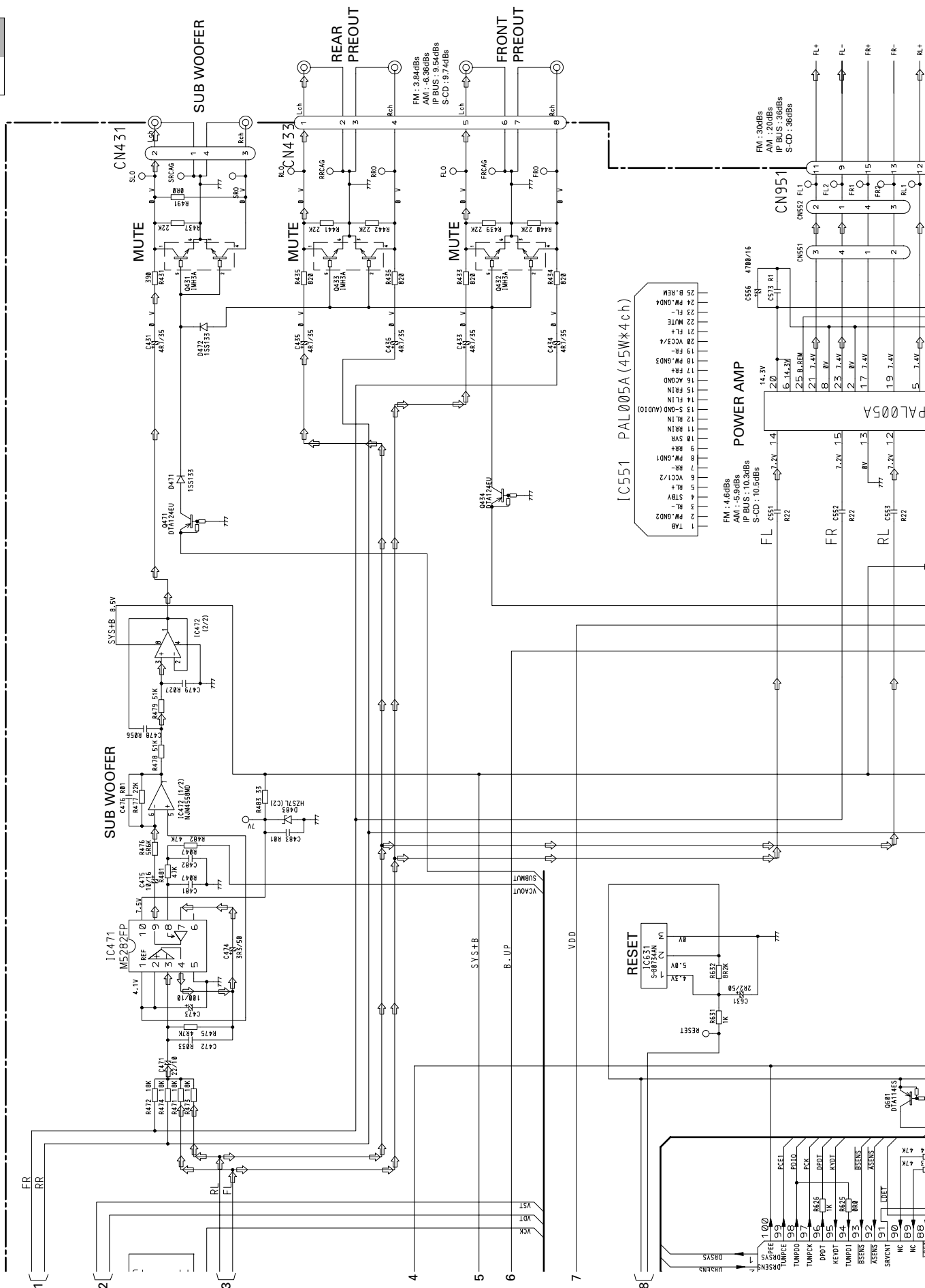


A-a A-b

A-a

A-a

A-b



IC551 PAL005A (45Wx4ch)

1	TAB
2	FL
3	FR
4	RL
5	RR
6	FL
7	FR
8	RL
9	RR
10	FL
11	FR
12	RL
13	RR
14	FL
15	FR
16	RL
17	RR
18	FL
19	FR
20	RL
21	RR
22	FL
23	FR
24	RL
25	RR

POWER AMP

FM : 4.6dBs
AM : 5.9dBs
IP BUS : 10.3dBs
S-CD : 10.5dBs

5556 4700/16

14.3V

1.2V 1.4

1.2V 1.5

1.2V 1.6

1.2V 1.7

1.2V 1.8

1.2V 1.9

1.2V 2.0

1.2V 2.1

1.2V 2.2

1.2V 2.3

1.2V 2.4

1.2V 2.5

1.2V 2.6

1.2V 2.7

1.2V 2.8

1.2V 2.9

1.2V 3.0

1.2V 3.1

1.2V 3.2

1.2V 3.3

1.2V 3.4

1.2V 3.5

1.2V 3.6

1.2V 3.7

1.2V 3.8

1.2V 3.9

1.2V 4.0

1.2V 4.1

1.2V 4.2

1.2V 4.3

1.2V 4.4

1.2V 4.5

1.2V 4.6

1.2V 4.7

1.2V 4.8

1.2V 4.9

1.2V 5.0

1.2V 5.1

1.2V 5.2

1.2V 5.3

1.2V 5.4

1.2V 5.5

1.2V 5.6

1.2V 5.7

1.2V 5.8

1.2V 5.9

1.2V 6.0

1.2V 6.1

1.2V 6.2

1.2V 6.3

1.2V 6.4

1.2V 6.5

1.2V 6.6

1.2V 6.7

1.2V 6.8

1.2V 6.9

1.2V 7.0

1.2V 7.1

1.2V 7.2

1.2V 7.3

1.2V 7.4

1.2V 7.5

1.2V 7.6

1.2V 7.7

1.2V 7.8

1.2V 7.9

1.2V 8.0

1.2V 8.1

1.2V 8.2

1.2V 8.3

1.2V 8.4

1.2V 8.5

1.2V 8.6

1.2V 8.7

1.2V 8.8

1.2V 8.9

1.2V 9.0

1.2V 9.1

1.2V 9.2

1.2V 9.3

1.2V 9.4

1.2V 9.5

1.2V 9.6

1.2V 9.7

1.2V 9.8

1.2V 9.9

1.2V 10.0

1.2V 10.1

1.2V 10.2

1.2V 10.3

1.2V 10.4

1.2V 10.5

1.2V 10.6

1.2V 10.7

1.2V 10.8

1.2V 10.9

1.2V 11.0

1.2V 11.1

1.2V 11.2

1.2V 11.3

1.2V 11.4

1.2V 11.5

1.2V 11.6

1.2V 11.7

1.2V 11.8

1.2V 11.9

1.2V 12.0

1.2V 12.1

1.2V 12.2

1.2V 12.3

1.2V 12.4

1.2V 12.5

1.2V 12.6

1.2V 12.7

1.2V 12.8

1.2V 12.9

1.2V 13.0

1.2V 13.1

1.2V 13.2

1.2V 13.3

1.2V 13.4

1.2V 13.5

1.2V 13.6

1.2V 13.7

1.2V 13.8

1.2V 13.9

1.2V 14.0

1.2V 14.1

1.2V 14.2

1.2V 14.3

1.2V 14.4

1.2V 14.5

1.2V 14.6

1.2V 14.7

1.2V 14.8

1.2V 14.9

1.2V 15.0

1.2V 15.1

1.2V 15.2

1.2V 15.3

1.2V 15.4

1.2V 15.5

1.2V 15.6

1.2V 15.7

1.2V 15.8

1.2V 15.9

1.2V 16.0

1.2V 16.1

1.2V 16.2

1.2V 16.3

1.2V 16.4

1.2V 16.5

1.2V 16.6

1.2V 16.7

1.2V 16.8

1.2V 16.9

1.2V 17.0

1.2V 17.1

1.2V 17.2

1.2V 17.3

1.2V 17.4

1.2V 17.5

1.2V 17.6

1.2V 17.7

1.2V 17.8

1.2V 17.9

1.2V 18.0

1.2V 18.1

1.2V 18.2

1.2V 18.3

1.2V 18.4

1.2V 18.5

1.2V 18.6

1.2V 18.7

1.2V 18.8

1.2V 18.9

1.2V 19.0

1.2V 19.1

1.2V 19.2

1.2V 19.3

1.2V 19.4

1.2V 19.5

1.2V 19.6

1.2V 19.7

1.2V 19.8

1.2V 19.9

1.2V 20.0

1.2V 20.1

1.2V 20.2

1.2V 20.3

1.2V 20.4

1.2V 20.5

1.2V 20.6

1.2V 20.7

1.2V 20.8

1.2V 20.9

1.2V 21.0

1.2V 21.1

1.2V 21.2

1.2V 21.3

1.2V 21.4

1.2V 21.5

1.2V 21.6

1.2V 21.7

1.2V 21.8

1.2V 21.9

1.2V 22.0

1.2V 22.1

1.2V 22.2

1.2V 22.3

1.2V 22.4

1.2V 22.5

1.2V 22.6

1.2V 22.7

1.2V 22.8

1.2V 22.9

1.2V 23.0

1.2V 23.1

1.2V 23.2

1.2V 23.3

1.2V 23.4

1.2V 23.5

1.2V 23.6

1.2V 23.7

1.2V 23.8

1.2V 23.9

1.2V 24.0

1.2V 24.1

1.2V 24.2

1.2V 24.3

1.2V 24.4

1.2V 24.5

1.2V 24.6

1.2V 24.7

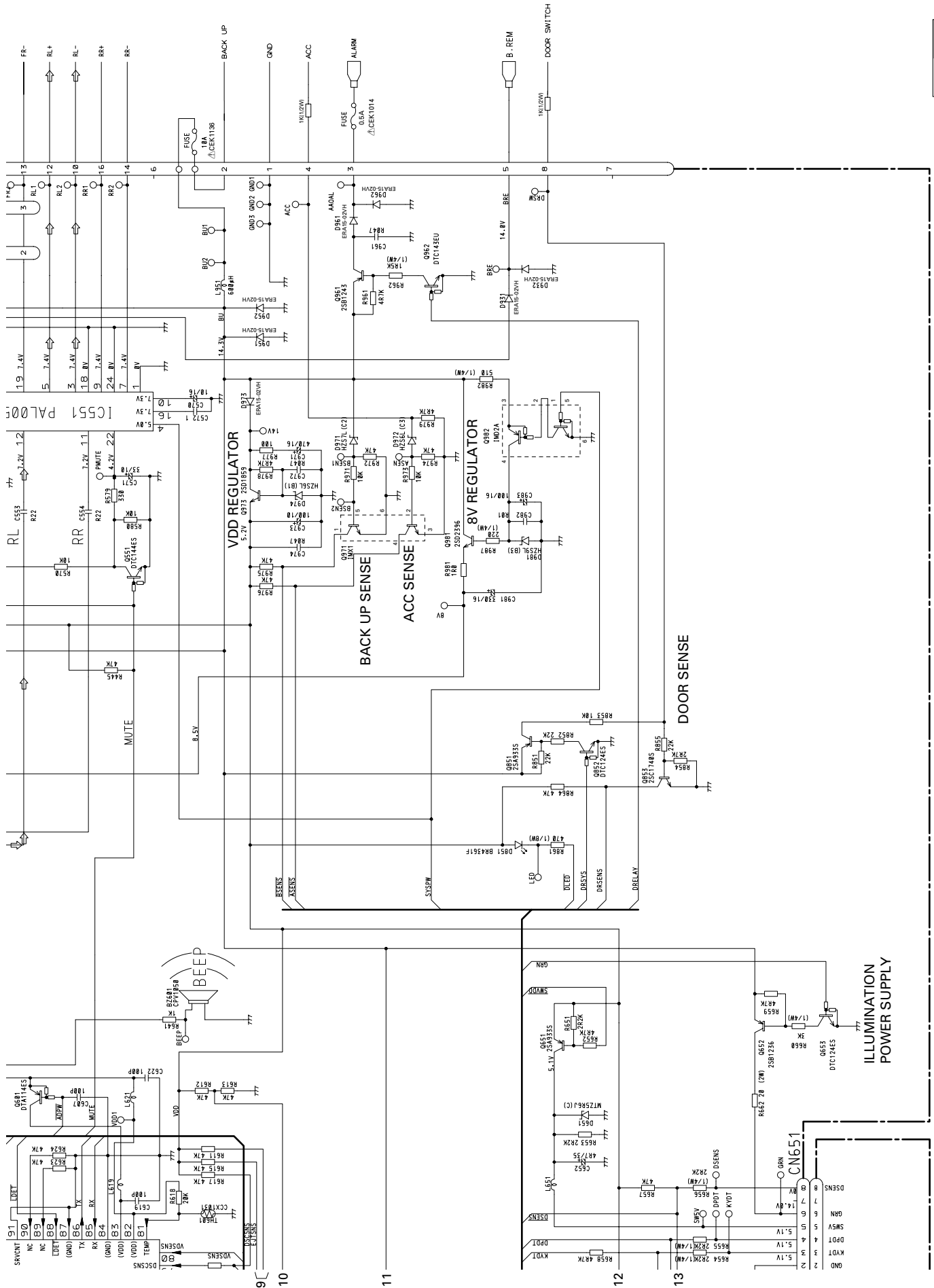
1.2V 24.8

1.2V 24.9

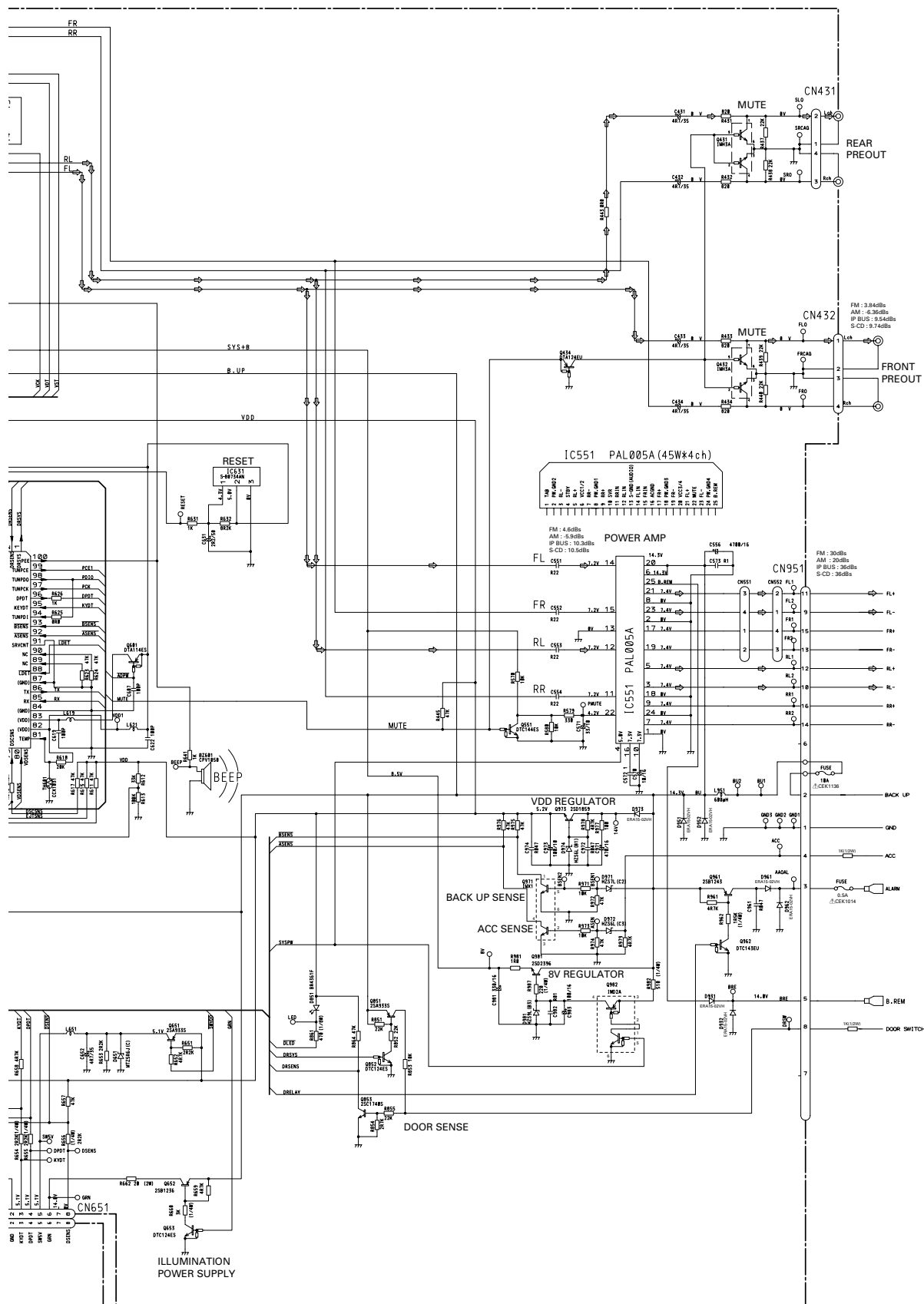
1.2V 25.0

1.2V 25.1

1.2V 25.2



A-b



C KEYBOARD UNIT

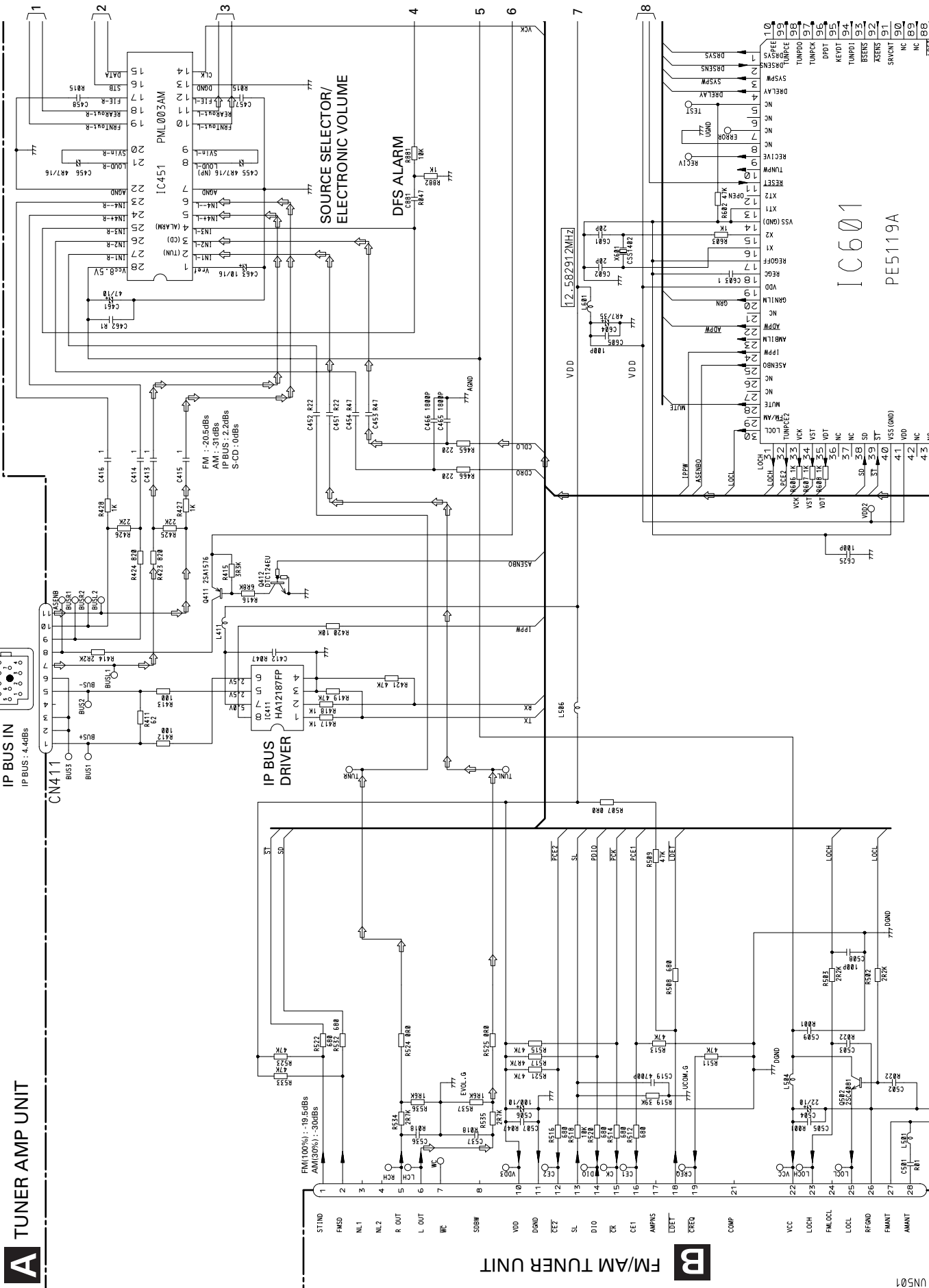
A

A-a A-b

A TUNER AMP UNIT

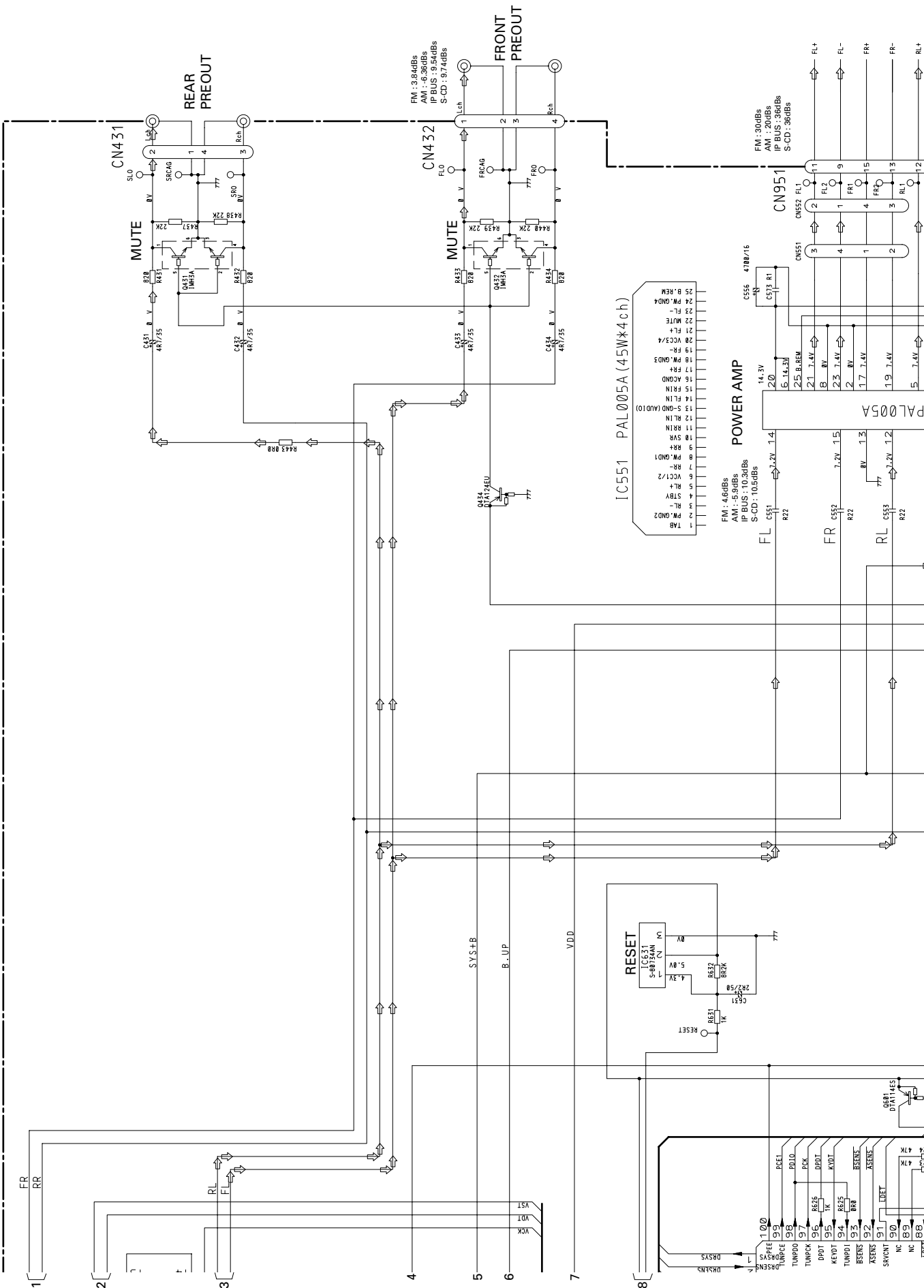
B FM/AM TUNER UNIT

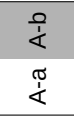
IC601
PE5119A



A-a

A-a A-b





B

C KEYBOARD UNIT

A CN651

CN1801

8 MGND
7 ILGND
6 KYDT
5 DPDT
4 SW5V
3 IL +B
2
1 DSSENS

R1801 2R2K (1/8W)
R1802 2R2K (1/8W)

C1801 R1

D1801 DA204U

D1802 DA204U

IC1802 RS-140

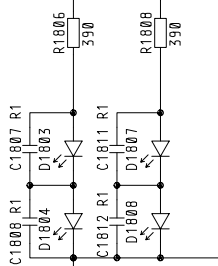
R1804 120

C1802 10/6R3

R1805 2R2

1/4

COM3 COM0 COM3 COM1 COM2 COM1 COM0
SEG47 SEG49 SEG48 SEG47 SEG46 SEG45 SEG44 SEG43 SEG42 SEG41 SEG40
59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40



D1803-D1808:
NSSW440-9159

EQ B.
CENTER

C1813 R1

D1811 CL170UBX

777

KST5

KST4

KST6

KST1

KST3

KST2

KDT1

KDT2

KDT3

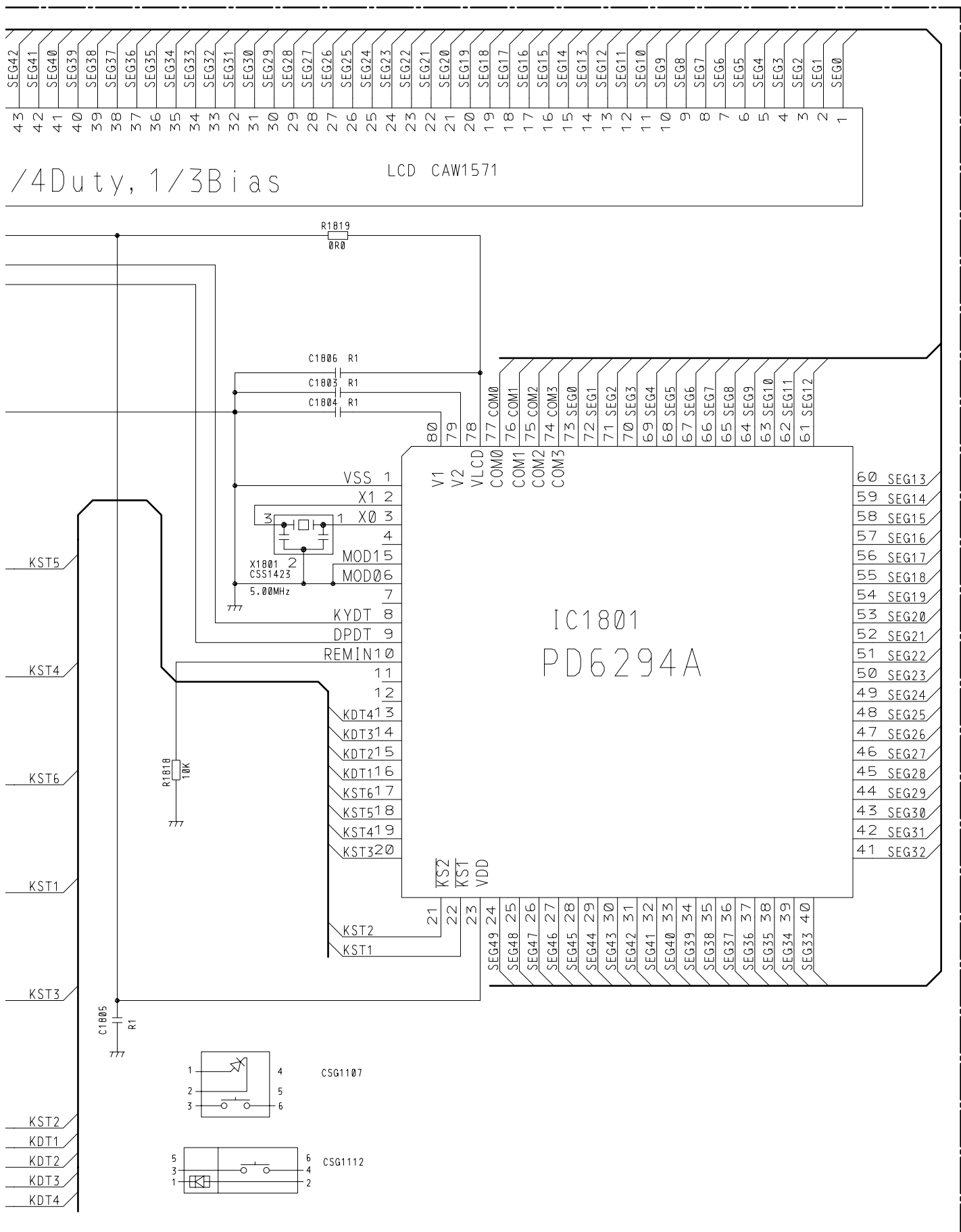
KDT4



IC1801
PD6294A

C

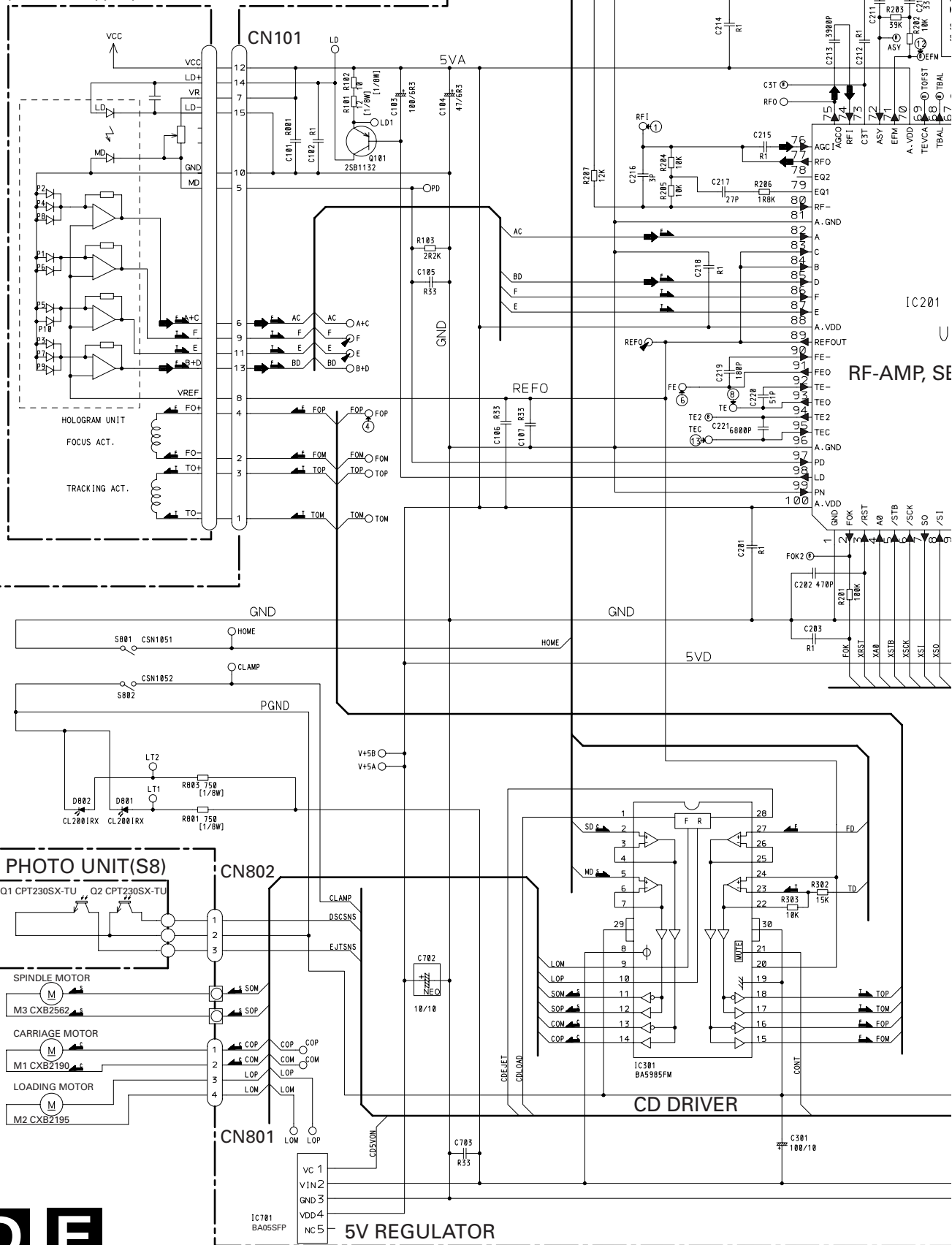
D

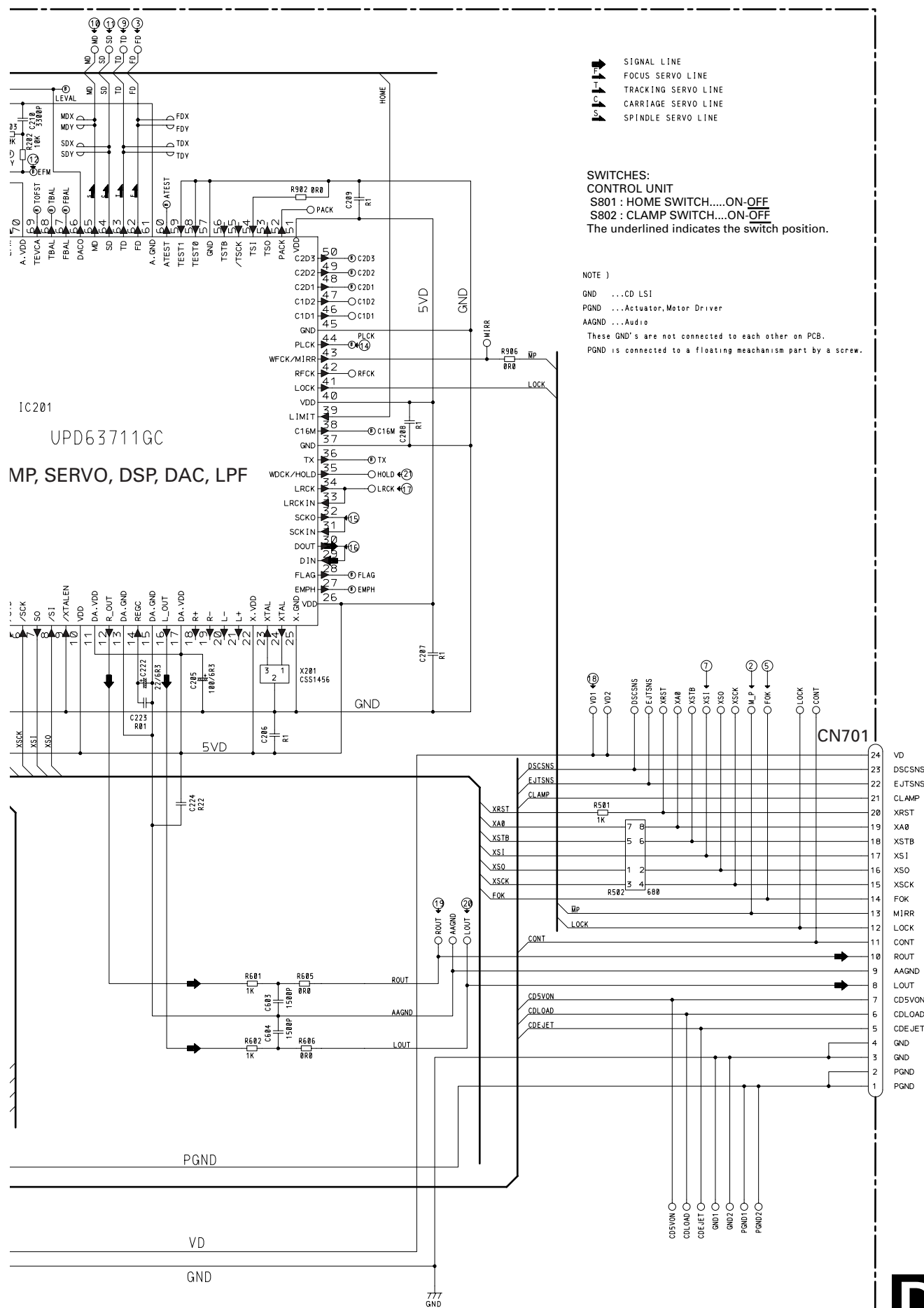


3.8 CD MECHANISM MODULE

D CONTROL UNIT

PICKUP UNIT
(SERVICE)(P8)





A

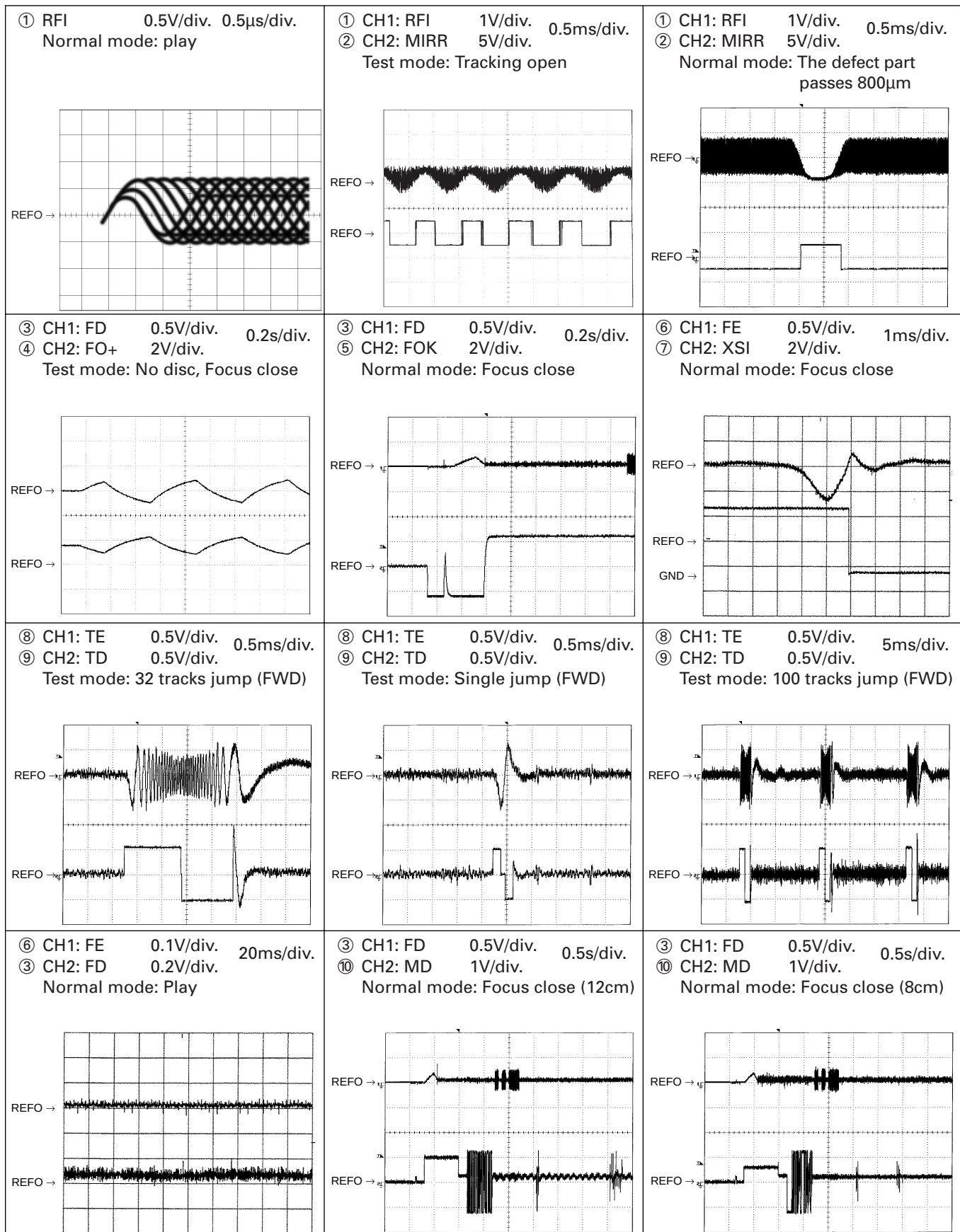
B

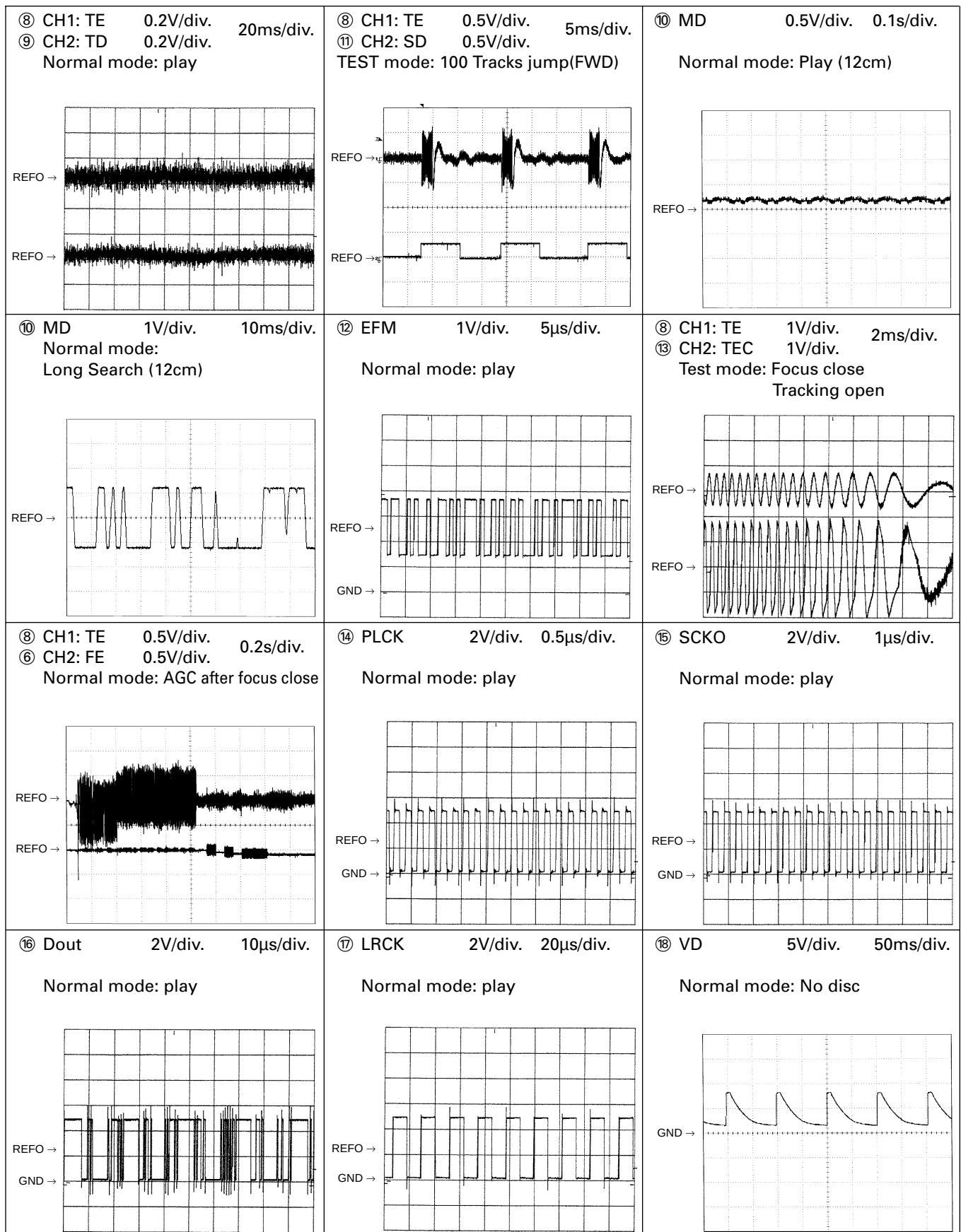
C

D

Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFO:2.5V

● Waveforms





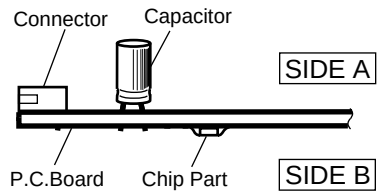
⑱ CH1: R OUT 1V/div. 0.2ms/div. ⑳ CH2: L OUT 1V/div. Normal mode: Play (1kHz 0dB)	⑥ CH1: FE 0.2V/div. 1ms/div. ③ CH2: FD 0.5V/div. Normal mode: During AGC	⑧ CH1: TE 0.2V/div. 1ms/div. ⑨ CH2: TD 0.5V/div. Normal mode: During AGC
① CH1: RFI 1V/div. 0.5ms/div. ② CH2: HOLD 5V/div. Normal mode: The defect part passes 800μm(B.D)	③ CH1: FD 0.5V/div. 0.5ms/div. ② CH2: HOLD 5V/div. Normal mode: The defect part passes 800μm(B.D)	⑨ CH1: TD 0.1V/div. 0.5ms/div. ② CH2: HOLD 5V/div. Normal mode: The defect part passes 800μm(B.D)

4. PCB CONNECTION DIAGRAM

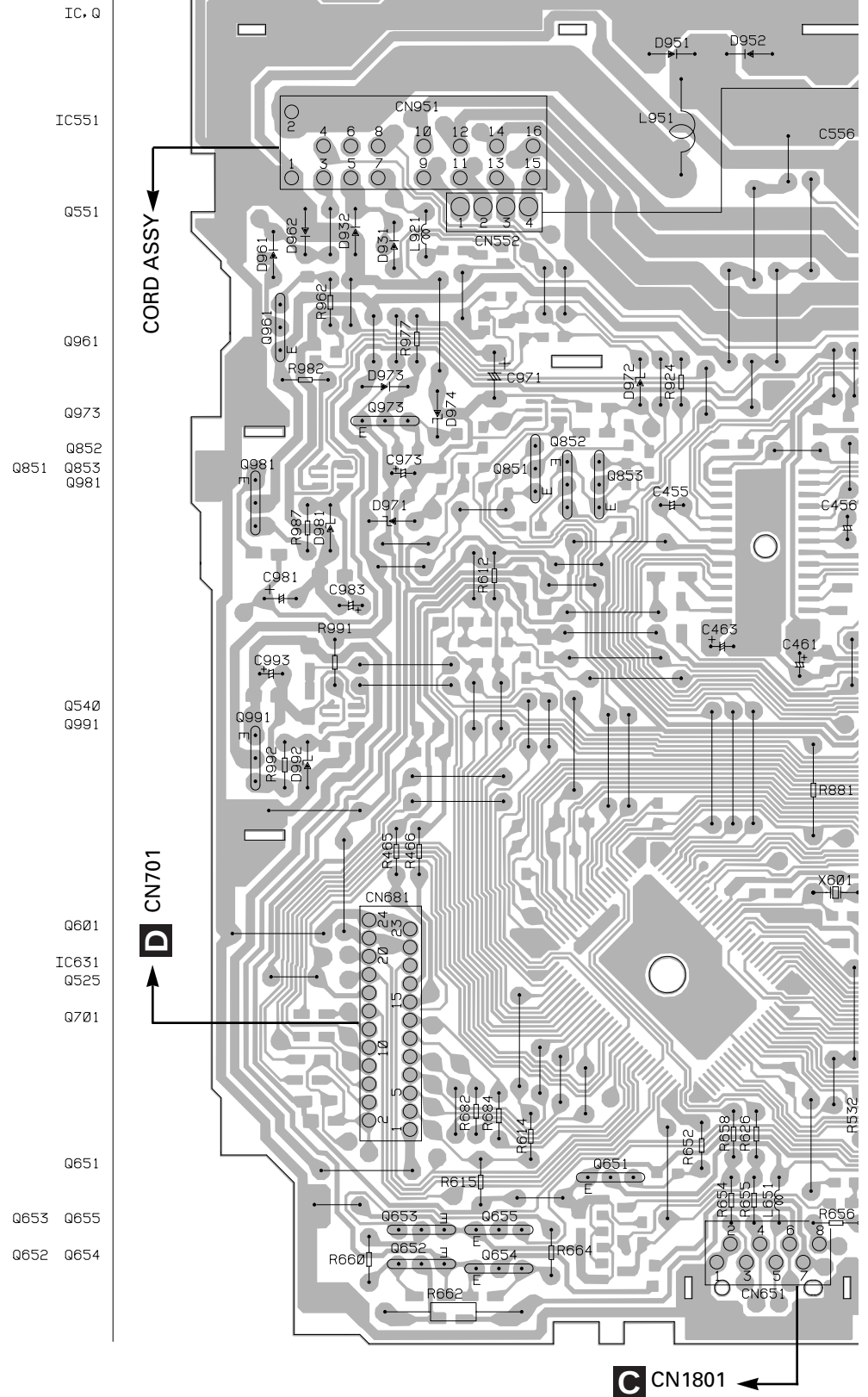
4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

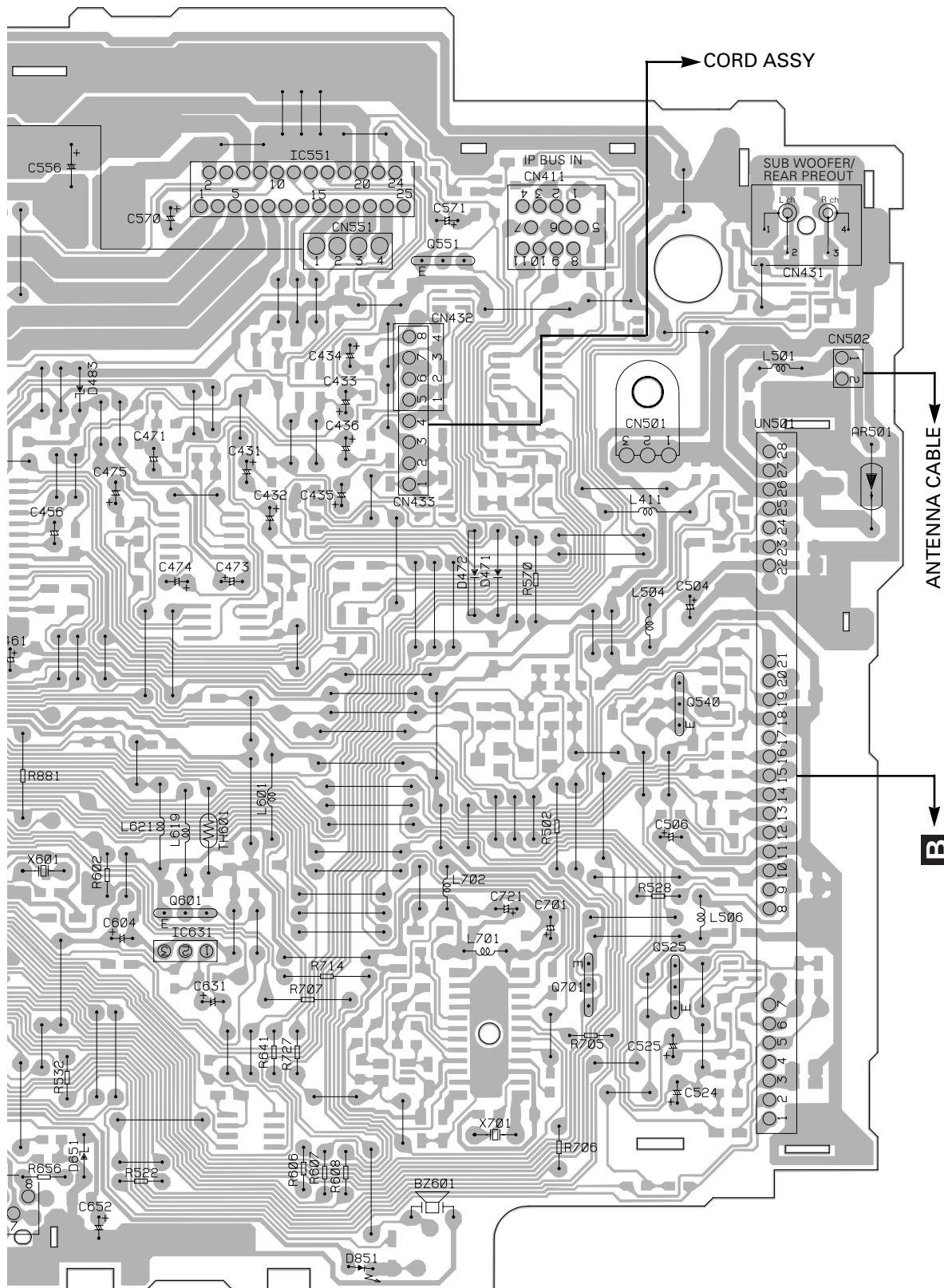
1. The parts mounted on this PCB include all necessary parts for several destination.
- For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



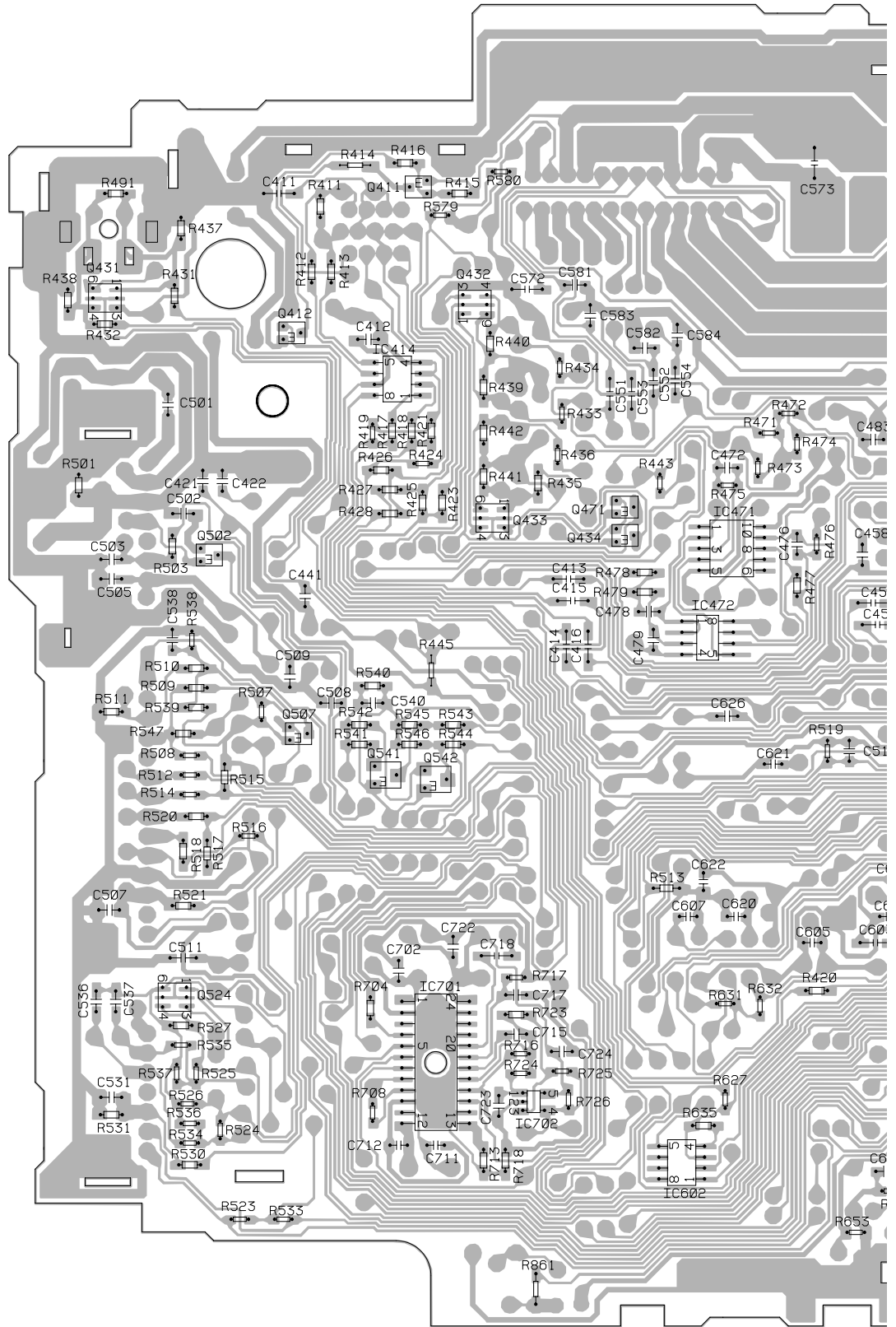
A TUNER AMP UNIT



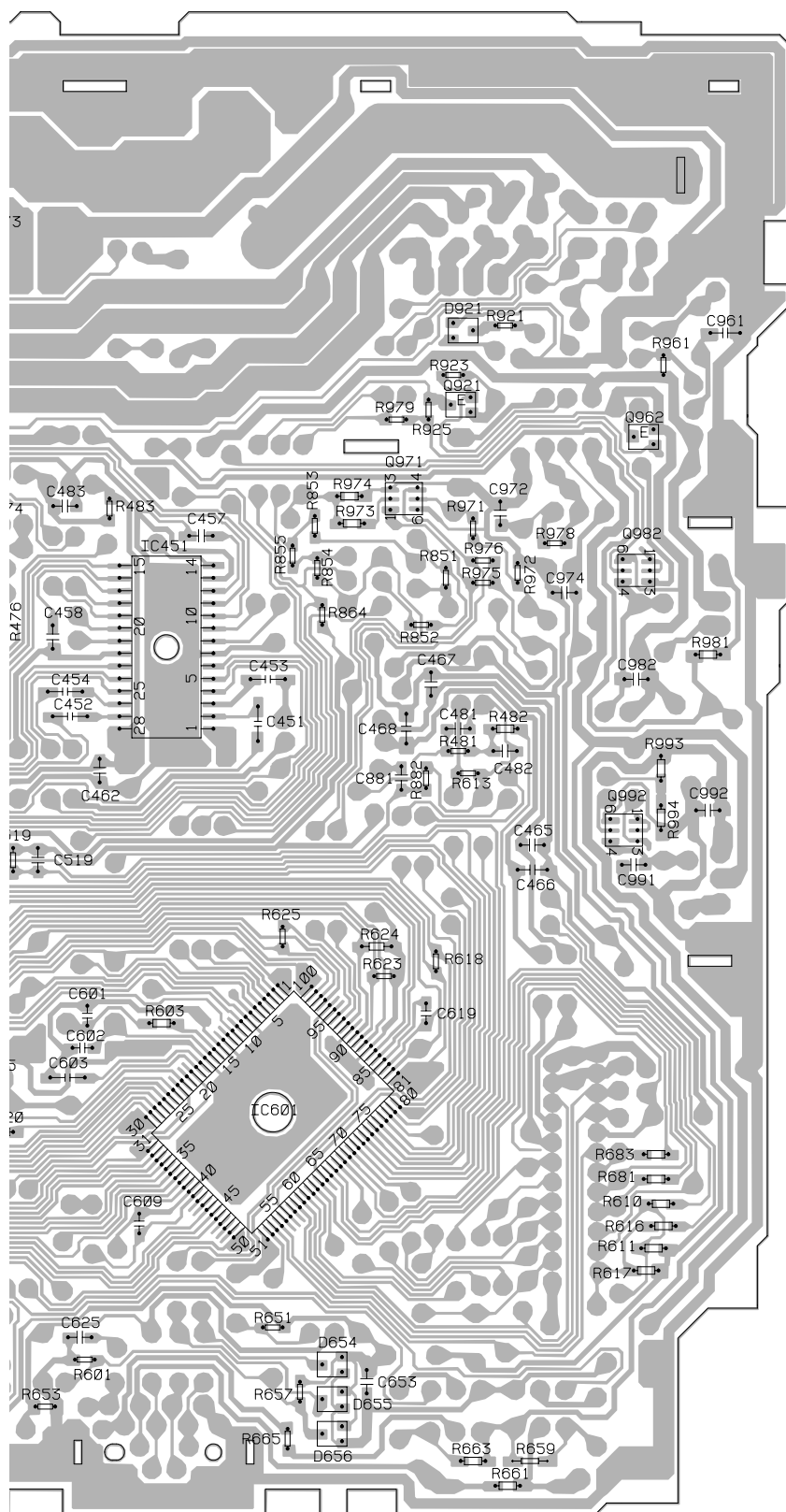
SIDE A



A TUNER AMP UNIT



SIDE B



IC, Q

Q411

Q431
Q432

Q412
Q921
IC414
Q962

Q971

IC451 Q982

Q471 IC471
Q433
Q502 Q434

IC472

Q992
Q507

Q541 Q542

IC601
IC701
Q524

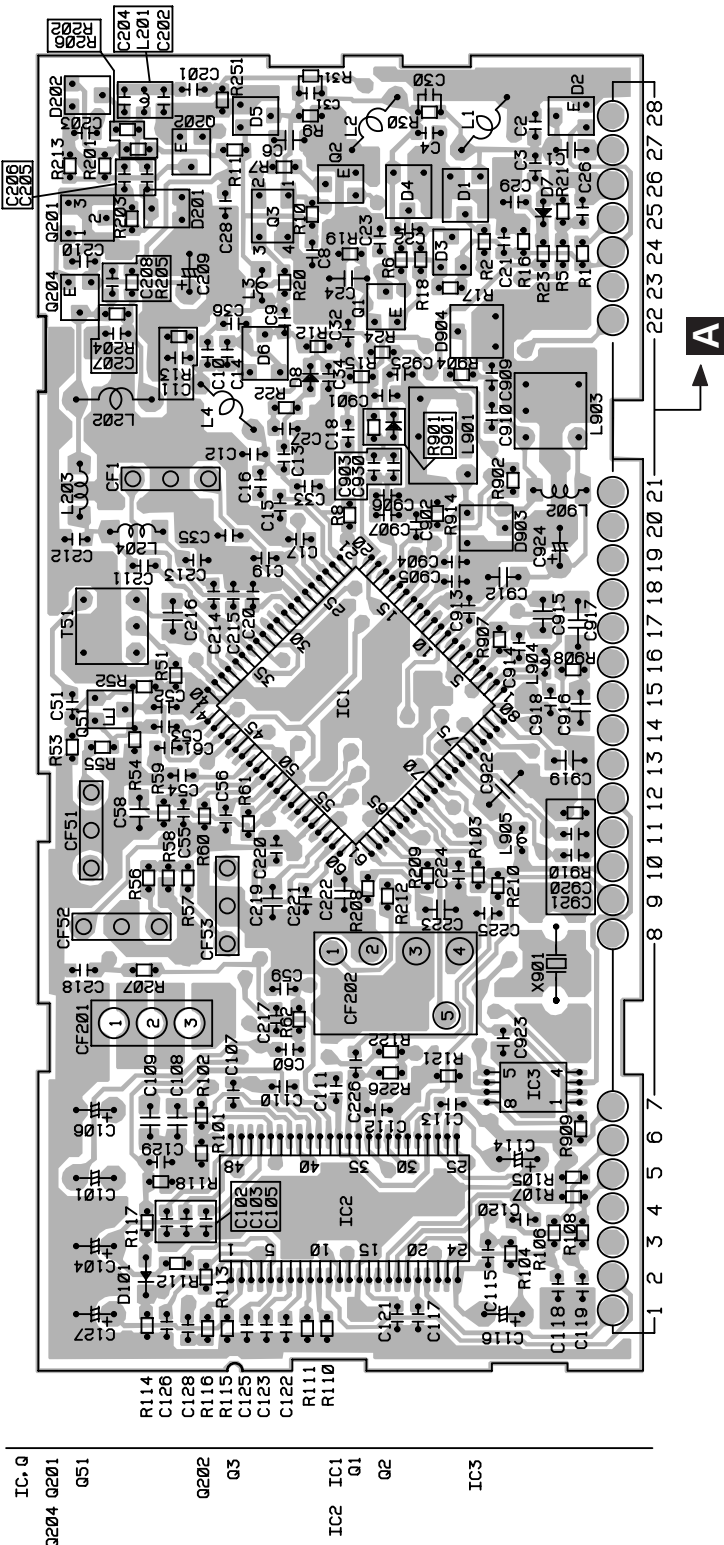
IC702

IC602

DEH-P410,P4100,P310 4.2 FM/AM TUNER UNIT

SIDE A

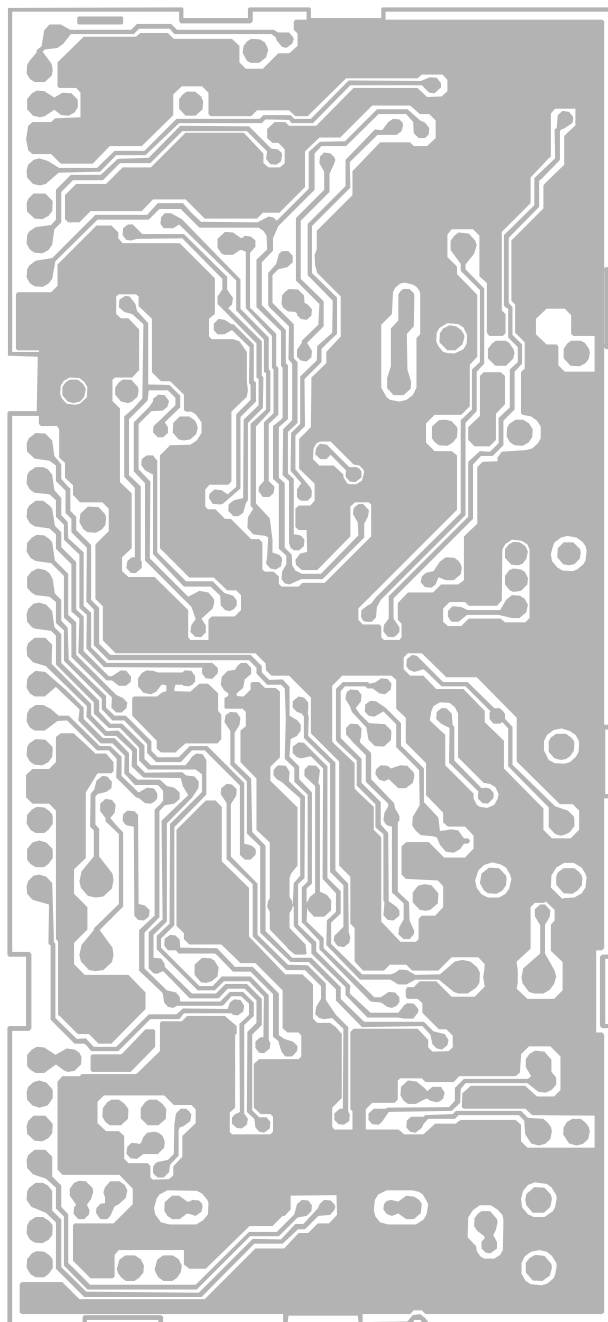
FM/AM TUNER UNIT



SIDE B

FM/AM TUNER UNIT

B



A

B

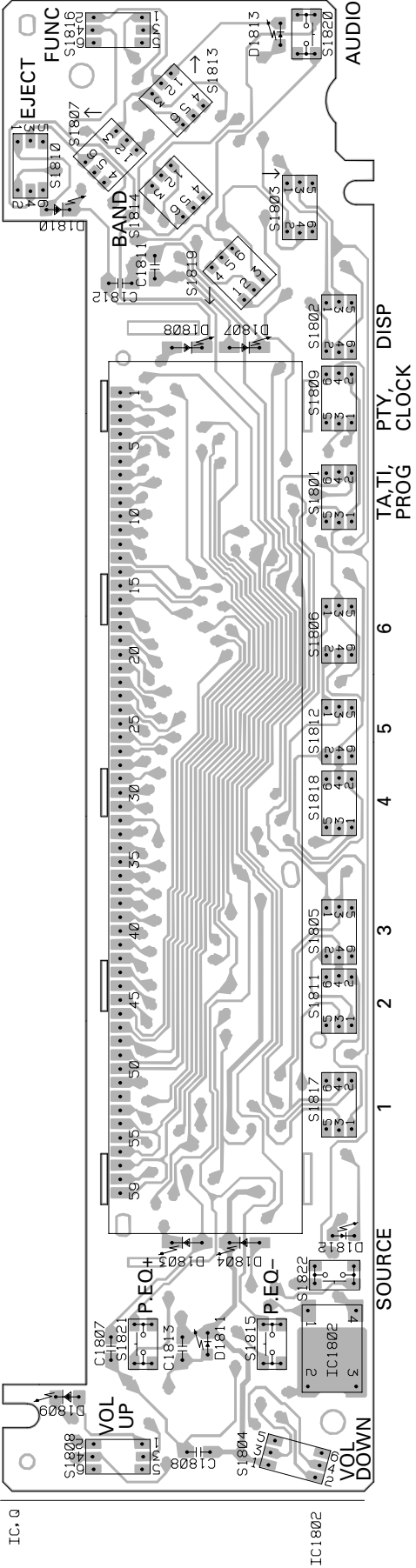
C

D

4.3 KEYBOARD UNIT

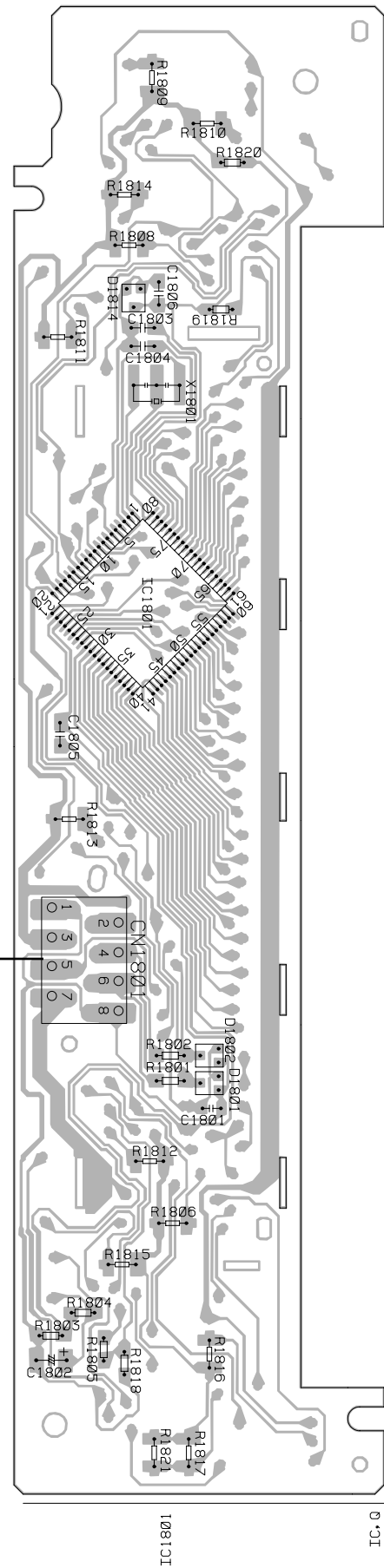
SIDE A

C KEYBOARD UNIT



C KEYBOARD UNIT

A CN651



SIDE B

SIDE A

5. ELECTRICAL PARTS LIST

NOTES:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol and No.===Part Name	Part No.	====Circuit Symbol and No.===Part Name	Part No.
A Unit Number : CWM6835		D 992 Diode	HZS9L(B1)
Unit Name : Tuner Amp Unit		L 411 Inductor	LAU3R3J
(DEH-P410/X1N/UC)		L 501 Ferri-Inductor	LAU4R7K
		L 504 Ferri-Inductor	LAU2R2K
		L 506 Inductor	LAU100K
		L 601 Inductor	LAU100K
		L 619 Ferri-Inductor	LAU2R2K
		L 621 Ferri-Inductor	LAU2R2K
		L 651 Ferri-Inductor	LAU101K
		L 951 Choke Coil 600μH	CTH1221
		TH 601 Thermistor	CCX1031
		X 601 Radiator 12.58291MHz	CSS1402
		BZ 601 FM/AM Tuner Unit	CWE1501
		AR 501 Buzzer	CPV1050
			DSP-201M-S00B
MISCELLANEOUS		RESISTORS	
IC 411 IC	HA12187FP	R 411	RS1/10S620J
IC 451 IC	PML003AM	R 412	RS1/10S101J
IC 471 IC	M5282FP	R 413	RS1/10S101J
IC 472 IC	NJM4558MD	R 414	RS1/8S222J
IC 551 IC	PAL005A	R 415	RS1/10S332J
IC 601 IC	PE5119A	R 416	RS1/10S682J
IC 631 IC	S-80734AN	R 417	RS1/10S102J
Q 411 Transistor	2SA1576	R 418	RS1/10S102J
Q 412 Transistor	DTC124EU	R 419	RS1/10S473J
Q 431 Transistor	IMH3A	R 420	RS1/10S103J
Q 432 Transistor	IMH3A	R 421	RS1/10S473J
Q 433 Transistor	IMH3A	R 423	RS1/10S821J
Q 434 Transistor	DTA124EU	R 424	RS1/10S821J
Q 471 Transistor	DTA124EU	R 425	RS1/10S223J
Q 502 Transistor	2SC4081	R 426	RS1/10S223J
Q 551 Transistor	DTC144ES	R 427	RS1/10S102J
Q 601 Transistor	DTA114ES	R 428	RS1/10S102J
Q 651 Transistor	2SA933S	R 431	RS1/10S391J
Q 652 Transistor	2SB1236	R 433	RS1/10S821J
Q 653 Transistor	DTC124ES	R 434	RS1/10S821J
Q 851 Transistor	2SA933S	R 435	RS1/10S821J
Q 852 Transistor	DTC124ES	R 436	RS1/10S821J
Q 853 Transistor	2SC1740S	R 437	RS1/10S223J
Q 961 Transistor	2SB1243	R 439	RS1/10S223J
Q 962 Transistor	DTC143EU	R 440	RS1/10S223J
Q 971 Transistor	IMX1	R 441	RS1/10S223J
Q 973 Transistor	2SD1859	R 442	RS1/10S223J
Q 981 Transistor	2SD2396	R 445	RS1/8S473J
Q 982 Transistor	IMD2A	R 465	RD1/4PU221J
Q 991 Transistor	2SD2396	R 466	RD1/4PU221J
Q 992 Transistor	IMD2A	R 471	RS1/10S183J
D 471 Diode	1SS133	R 472	RS1/10S183J
D 472 Diode	1SS133	R 473	RS1/10S183J
D 483 Diode	HZS7L(C2)	R 474	RS1/10S183J
D 651 Diode	MTZ5R6J(C)	R 475	RS1/10S472J
D 654 Diode Network	DA204U		
D 655 Diode Network	DA204U		
D 656 Diode Network	DA204U		
D 851 LED	BR4361F		
D 931 Diode	ERA15-02VH		
D 932 Diode	ERA15-02VH		
D 951 Diode	ERA15-02VH		
D 952 Diode	ERA15-02VH		
D 961 Diode	ERA15-02VH		
D 962 Diode	ERA15-02VH		
D 971 Diode	HZS7L(C2)		
D 972 Diode	HZS6L(C3)		
D 973 Diode	ERA15-02VH		
D 974 Diode	HZS6L(B1)		
D 981 Diode	HZS9L(B3)		

====Circuit Symbol and No.===Part Name		Part No.	====Circuit Symbol and No.===Part Name		Part No.
R	476	RS1/10S562J	R	657	RS1/10S473J
R	477	RS1/10S223J	R	658	RD1/4PU472J
R	478	RS1/10S513J	R	659	RS1/8S472J
R	479	RS1/10S513J	R	660	RD1/4PU302J
R	481	RS1/10S473J	R	662	RS2PMF200J
R	482	RS1/10S473J	R	681	RS1/10S681J
R	483	RS1/10S330J	R	682	RD1/4PU102J
R	491	RS1/10S0R0J	R	683	RS1/10S102J
R	501	RS1/10S0R0J	R	684	RD1/4PU102J
R	502	RD1/4PU222J	R	851	RS1/10S223J
R	503	RS1/10S222J	R	852	RS1/10S223J
R	507	RS1/10S0R0J	R	853	RS1/10S103J
R	508	RS1/10S681J	R	854	RS1/10S272J
R	509	RS1/10S473J	R	855	RS1/10S223J
R	511	RS1/10S473J	R	861	RS1/8S471J
R	512	RS1/10S681J	R	864	RS1/10S473J
R	513	RS1/8S473J	R	881	RD1/4PU103J
R	514	RS1/10S681J	R	882	RS1/10S102J
R	515	RS1/8S473J	R	961	RS1/10S472J
R	516	RS1/10S681J	R	962	RD1/4PU152J
R	517	RS1/8S472J	R	971	RS1/10S103J
R	518	RS1/10S103J	R	972	RS1/10S473J
R	519	RS1/10S393J	R	973	RS1/10S103J
R	520	RS1/10S681J	R	974	RS1/10S473J
R	521	RS1/10S473J	R	975	RS1/10S473J
R	522	RD1/4PU681J	R	976	RS1/10S473J
R	523	RS1/10S473J	R	977	RD1/4PU101J
R	524	RS1/10S0R0J	R	978	RS1/10S472J
R	525	RS1/10S0R0J	R	979	RS1/10S472J
R	532	RD1/4PU681J	R	981	RS1/10S1R0J
R	533	RS1/10S473J	R	982	RD1/4PU511J
R	534	RS1/10S272J	R	987	RD1/4PU221J
R	535	RS1/10S272J	R	991	RD1/4PU221J
R	536	RS1/10S162J	R	992	RD1/4PU221J
R	537	RS1/10S162J	R	993	RS1/10S472J
R	570	RD1/4PU103J	R	994	RS1/10S222J
R	579	RS1/10S331J	CAPACITORS		
R	580	RS1/10S103J			
R	602	RD1/4PU473J			
R	603	RS1/10S102J			
R	606	RD1/4PU102J			
R	607	RD1/4PU102J	C	411	CKSYB104K25
R	608	RD1/4PU102J	C	412	CKSQYB473K25
R	610	RS1/10S222J	C	413	CKSYB105K16
R	611	RS1/10S473J	C	414	CKSYB105K16
R	612	RD1/4PU473J	C	415	CKSYB105K16
R	613	RS1/10S473J	C	416	CKSYB105K16
R	614	RD1/4PU222J	C	431	CEJA4R7M35
R	615	RD1/4PU473J	C	433	CEJA4R7M35
R	616	RS1/10S222J	C	434	CEJA4R7M35
R	617	RS1/10S473J	C	435	CEAL4R7M35
R	618	RN1/10SE2002D	C	436	CEAL4R7M35
R	623	RS1/10S473J	C	451	CKSYB224K25
R	624	RS1/8S473J	C	452	CKSYB224K25
R	625	RS1/10S0R0J	C	453	CKSYB474K16
R	626	RD1/4PU102J	C	454	CKSYB474K16
R	631	RS1/10S102J	C	455	CEJANP4R7M16
R	632	RS1/10S822J	C	456	CEJANP4R7M16
R	641	RD1/4PU102J	C	457	CKSQYB153K50
R	651	RS1/10S222J	C	458	CKSQYB153K50
R	652	RD1/4PU472J	C	461	CEAL470M10
R	653	RS1/10S222J	C	462	CKSQYB104K25
R	654	RD1/4PU222J	C	463	CEJA100M16
R	655	RD1/4PU222J	C	465	CCSQL182J50
R	656	RD1/4PU222J	C	466	CCSSL182J50
			C	471	CEJANP220M10

DEH-P410,P4100,P310

====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
C 472	CKSQYB333K50	Q 411	Transistor
C 473	CEJA101M10	Q 412	Transistor
C 474	CEJA3R3M50	Q 431	Transistor
C 475	CEJA100M16	Q 432	Transistor
C 476	CKSQYB103K50	Q 434	Transistor
C 478	CKSQYB563K25	Q 502	Transistor
C 479	CKSQYB273K50	Q 551	Transistor
C 481	CKSQYB473K25	Q 601	Transistor
C 482	CKSQYB473K25	Q 651	Transistor
C 483	CKSQYB103K50	Q 652	Transistor
C 501	CKSQYB103K50	Q 653	Transistor
C 502	CKSQYB223K50	Q 851	Transistor
C 503	CKSQYB223K50	Q 852	Transistor
C 504	CEJA220M10	Q 853	Transistor
C 505	CKSQYB102K50	Q 961	Transistor
C 506	CEAL101M10	Q 962	Transistor
C 507	CKSQYB473K25	Q 971	Transistor
C 508	CCSQCH101J50	Q 973	Transistor
C 519	CKSQYB472K50	Q 981	Transistor
C 536	CKSQYB183K50	Q 982	Transistor
C 537	CKSQYB183K50	Q 991	Transistor
C 551	CKSYB224K25	Q 992	Transistor
C 552	CKSYB224K25	D 651	Diode
C 553	CKSYB224K25	D 654	Diode Network
C 554	CKSYB224K25	D 655	Diode Network
C 556	4700μF/16V	D 656	Diode Network
C 570	CEJA100M16	D 851	LED
C 571	CEJA330M10	D 931	Diode
C 572	CKSYB105K16	D 932	Diode
C 573	CKSYB104K50	D 951	Diode
C 601	CCSQCH200J50	D 952	Diode
C 602	CCSQCH200J50	D 961	Diode
C 603	CKSYB105K16	D 962	Diode
C 604	CEJA4R7M35	D 971	Diode
C 605	CCSQCH101J50	D 972	Diode
C 607	CCSQCH101J50	D 973	Diode
C 619	CCSQCH101J50	D 974	Diode
C 622	CCSQCH101J50	D 981	Diode
C 625	CCSQCH101J50	D 992	Diode
C 631	CEJA2R2M50	L 411	Inductor
C 652	CEJA4R7M35	L 501	Ferri-Inductor
C 653	CKSQYB473K25	L 504	Ferri-Inductor
C 881	CKSQYB473K25	L 506	Inductor
C 961	CKSYB473K50	L 601	Inductor
C 971	470μF/16V	L 619	Ferri-Inductor
C 972	CKSQYB473K25	L 621	Ferri-Inductor
C 973	CEJA101M10	L 651	Ferri-Inductor
C 974	CKSQYB473K25	L 951	Choke Coil 600μH
C 981	330μF/16V	TH 601	Thermistor
C 982	CCH1326	X 601	Radiator 12.58291MHz
C 983	CEJA101M16		FM/AM Tuner Unit
C 991	CKSQYB473K25	BZ 601	Buzzer
C 992	CKSQYB102K50	AR 501	
C 993	CEJA101M10		

A Unit Number : CWM6834
Unit Name : Tuner Amp Unit
(DEH-P4100/X1N/UC, DEH-P310/X1N/UC)

MISCELLANEOUS

IC 411	IC	HA12187FP
IC 451	IC	PML003AM
IC 551	IC	PAL005A
IC 601	IC	PE5119A
IC 631	IC	S-80734AN

RESISTORS

R 411	RS1/10S620J
R 412	RS1/10S101J
R 413	RS1/10S101J
R 414	RS1/8S222J
R 415	RS1/10S332J
R 416	RS1/10S682J
R 417	RS1/10S102J
R 418	RS1/10S102J
R 419	RS1/10S473J
R 420	RS1/10S103J

====Circuit Symbol and No.====Part Name		Part No.	====Circuit Symbol and No.====Part Name		Part No.
R	421	RS1/10S473J	R	625	RS1/10S0R0J
R	423	RS1/10S821J	R	626	RD1/4PU102J
R	424	RS1/10S821J	R	631	RS1/10S102J
R	425	RS1/10S223J	R	632	RS1/10S822J
R	426	RS1/10S223J	R	641	RD1/4PU102J
R	427	RS1/10S102J	R	651	RS1/10S222J
R	428	RS1/10S102J	R	652	RD1/4PU472J
R	431	RS1/10S821J	R	653	RS1/10S222J
R	432	RS1/10S821J	R	654	RD1/4PU222J
R	433	RS1/10S821J	R	655	RD1/4PU222J
R	434	RS1/10S821J	R	656	RD1/4PU222J
R	437	RS1/10S223J	R	657	RS1/10S473J
R	438	RS1/10S223J	R	658	RD1/4PU472J
R	439	RS1/10S223J	R	659	RS1/8S472J
R	440	RS1/10S223J	R	660	RD1/4PU302J
R	443	RS1/10S0R0J	R	662	RS2PMF200J
R	445	RS1/8S473J	R	681	RS1/10S681J
R	465	RD1/4PU221J	R	682	RD1/4PU102J
R	466	RD1/4PU221J	R	683	RS1/10S102J
R	501	RS1/10S0R0J	R	684	RD1/4PU102J
R	502	RD1/4PU222J	R	851	RS1/10S223J
R	503	RS1/10S222J	R	852	RS1/10S223J
R	507	RS1/10S0R0J	R	853	RS1/10S103J
R	508	RS1/10S681J	R	854	RS1/10S272J
R	509	RS1/10S473J	R	855	RS1/10S223J
R	511	RS1/10S473J	R	861	RS1/8S471J
R	512	RS1/10S681J	R	864	RS1/10S473J
R	513	RS1/8S473J	R	881	RD1/4PU103J
R	514	RS1/10S681J	R	882	RS1/10S102J
R	515	RS1/8S473J	R	961	RS1/10S472J
R	516	RS1/10S681J	R	962	RD1/4PU152J
R	517	RS1/8S472J	R	971	RS1/10S103J
R	518	RS1/10S103J	R	972	RS1/10S473J
R	519	RS1/10S393J	R	973	RS1/10S103J
R	520	RS1/10S681J	R	974	RS1/10S473J
R	521	RS1/10S473J	R	975	RS1/10S473J
R	522	RD1/4PU681J	R	976	RS1/10S473J
R	523	RS1/10S473J	R	977	RD1/4PU101J
R	524	RS1/10S0R0J	R	978	RS1/10S472J
R	525	RS1/10S0R0J	R	979	RS1/10S472J
R	532	RD1/4PU681J	R	981	RS1/10S1R0J
R	533	RS1/10S473J	R	982	RD1/4PU511J
R	534	RS1/10S272J	R	987	RD1/4PU221J
R	535	RS1/10S272J	R	991	RD1/4PU221J
R	536	RS1/10S162J	R	992	RD1/4PU221J
R	537	RS1/10S162J	R	993	RS1/10S472J
R	570	RD1/4PU103J	R	994	RS1/10S222J
R	579	RS1/10S331J	CAPACITORS		
R	580	RS1/10S103J	C	411	CKSYB104K25
R	602	RD1/4PU473J	C	412	CKSQYB473K25
R	603	RS1/10S102J	C	413	CKSYB105K16
R	606	RD1/4PU102J	C	414	CKSYB105K16
R	607	RD1/4PU102J	C	415	CKSYB105K16
R	608	RD1/4PU102J			
R	610	RS1/10S222J	C	416	CKSYB105K16
R	611	RS1/10S473J	C	431	CEJA4R7M35
R	612	RD1/4PU333J	C	432	CEAL4R7M35
R	613	RS1/10S104J	C	433	CEJA4R7M35
R	614	RD1/4PU222J	C	434	CEJA4R7M35
R	615	RD1/4PU473J	C	451	CKSYB224K25
R	616	RS1/10S222J	C	452	CKSYB224K25
R	617	RS1/10S473J	C	453	CKSYB474K16
R	618	RN1/10SE2002D	C	454	CKSYB474K16
R	623	RS1/10S473J	C	455	CEJANP4R7M16
R	624	RS1/8S473J			

====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
C 456	CEJANP4R7M16	D 1 Diode	KV1410(23)
C 457	CKSQYB153K50	D 2 Diode	1SV248
C 458	CKSQYB153K50	D 6 Diode	KV1410(23)
C 461	CEAL470M10	D 201 Diode	DAN217U
C 462	CKSQYB104K25	D 202 Diode	DAN217U
C 463	CEJA100M16	D 903 Diode	KV1410(23)
C 465	CCSQSL182J50	D 904 Diode	SVC253
C 466	CCSSL182J50	L 1 Coil	CTC1155
C 501	CKSQYB103K50	L 3 Inductor	LCTB1R5K2125
C 502	CKSQYB223K50	L 4 Coil	CTC1155
C 503	CKSQYB223K50	L 201 Inductor	LCTB330K1608
C 504	CEJA220M10	L 202 Inductor	CTF1287
C 505	CKSQYB102K50	L 203 Inductor	LCTA121J3225
C 506	CEAL101M10	L 901 Coil	CTC1154
C 507	CKSQYB473K25	L 902 Inductor	LCTA3R3J3225
C 508	CCSQCH101J50	L 904 Inductor	LCTBR47K1608
C 509	CKSQYB102K50	L 905 Inductor	LCTBR47K1608
C 519	CKSQYB472K50	T 51 Coil	CTE1132
C 536	CKSQYB183K50	CF 51 Ceramic Filter	CTF1442
C 537	CKSQYB183K50	CF 52 Ceramic Filter	CTF1442
C 551	CKSYB224K25	CF 53 Ceramic Filter	CTF1442
C 552	CKSYB224K25	CF 202 Ceramic Filter	CTF1348
C 553	CKSYB224K25	X 901 Crystal Resonator 10.250MHz	CSS1432
C 554	CKSYB224K25		
C 556 4700μF/16V	CCH1328	RESISTORS	
C 570	CEJA100M16	R 1	RS1/16S183J
C 571	CEJA330M10	R 2	RS1/16S103J
C 572	CKSYB105K16	R 5	RS1/16S0R0J
C 573	CKSYB104K50	R 7	RS1/16S273J
C 601	CCSQCH200J50	R 8	RS1/16S473J
C 602	CCSQCH200J50	R 9	RS1/16S223J
C 603	CKSYB105K16	R 10	RS1/16S473J
C 604	CEJA4R7M35	R 11	RS1/16S221J
C 605	CCSQCH101J50	R 12	RS1/16S103J
C 607	CCSQCH101J50	R 13	RS1/16S104J
C 619	CCSQCH101J50	R 16	RS1/16S223J
C 622	CCSQCH101J50	R 17	RS1/16S221J
C 625	CCSQCH101J50	R 18	RS1/16S221J
C 631	CEJA2R2M50	R 19	RS1/16S473J
C 652	CEJA4R7M35	R 20	RS1/16S470J
C 653	CKSQYB473K25	R 31	RS1/16S0R0J
C 881	CKSQYB473K25	R 51	RS1/16S470J
C 961	CKSYB473K50	R 52	RS1/16S103J
C 971 470μF/16V	CCH1331	R 53	RS1/16S103J
C 972	CKSQYB473K25	R 54	RS1/16S331J
C 973	CEJA101M10	R 55	RS1/16S331J
C 974	CKSQYB473K25	R 56	RS1/16S560J
C 981 330μF/16V	CCH1326	R 57	RS1/16S560J
C 982	CKSQYB103K50	R 58	RS1/16S102J
C 983	CEJA101M16	R 59	RS1/16S225J
C 991	CKSQYB473K25	R 60	RS1/16S133J
C 992	CKSQYB102K50	R 61	RS1/16S433J
C 993	CEJA101M10	R 101	RS1/16S333J
		R 102	RS1/16S103J
		R 103	RS1/16S333J
		R 104	RS1/16S562J
		R 106	RS1/16S0R0J
		R 108	RS1/16S0R0J
		R 110	RS1/16S154J
		R 111	RS1/16S273J
		R 113	RS1/16S222J
		R 114	RS1/16S333J
		R 115	RS1/16S334J
		R 116	RS1/16S473J
		R 202	RS1/16S472J
IC 1 IC	PML002A		
IC 2 IC	PM4008A		
IC 3 IC	BR9010FV		
Q 1 Transistor	2SC4081		
Q 2 Transistor	DTC124EU		
Q 3 FET	3SK263		
Q 51 Transistor	2SC4081		
Q 201 FET	2SK932		
Q 202 Transistor	DTC124EU		
Q 204 Transistor	2SC4081		

B Unit Number : CWE1501
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
R 203	RS1/16S225J	C 201	CCSRCH471J50
R 204	RS1/16S102J	C 202	CCSRCH100D50
R 205	RS1/16S220J	C 203	CKSRYB104K16
R 206	RS1/16S471J	C 204	CKSRYB332K50
R 208	RS1/16S104J	C 205	CKSRYB103K50
R 209	RS1/16S104J	C 206	CKSRYB104K16
R 210	RS1/16S563J	C 207	CKSRYB473K16
R 213	RS1/16S223J	C 208	CCSRCH560J50
R 251	RS1/16S225J	C 209	CEAL470M6R3
R 902	RS1/16S103J	C 210	CKSRYB103K50
R 904	RS1/16S473J	C 211	CKSRYB103K50
R 907	RS1/16S103J	C 212	CCSRCH101J50
R 908	RS1/16S681J	C 215	CKSRYB223K25
R 909	RS1/16S473J	C 216	CKSQYB334K16
R 914	RS1/16S562J	C 217	CKSRYB103K50
CAPACITORS		C 219	CKSQYB105K10
C 1	CCSQCH4R0C50	C 220	CKSRYB104K16
C 6	CKSQYB105K10	C 221	CKSRYB473K16
C 8	CKSRYB222K50	C 222	CKSQYB334K16
C 10	CCSRCH220J50	C 223	CKSQYB474K16
C 11	CCSRCH150J50	C 224	CKSRYB104K16
C 12	CCSRCH8R0D50	C 225	CKSRYB272K50
C 14	CCSRCJ3R0C50	C 226	CKSRYB682K25
C 15	CKSRYB103K50	C 902	CCSRCH270J50
C 16	CKSRYB222K50	C 904	CKSRYB223K25
C 17	CKSRYB222K50	C 905	CKSRYB103K50
C 18	CCSRCJ3R0C50	C 906	CCSRTH100D50
C 19	CKSRYB103K50	C 907	CCSRTH150J50
C 20	CKSRYB103K50	C 909	CCSRTH100D50
C 21	CKSRYB103K50	C 910	CKSRYB332K50
C 24	CKSQYB334K16	C 912	CKSQYB474K16
C 26	CKSRYB472K50	C 913	CKSRYB223K25
C 30	CCSRCH220J50	C 914	CKSRYB682K25
C 32	CCSRCH470J50	C 915	CKSQYB223K25
C 35	CKSRYB103K50	C 916	CKSQYB474K16
C 51	CKSRYB103K50	C 917	CKSYB475K10
C 52	CKSRYB473K16	C 918	CKSRYB223K25
C 53	CCSRCK2R0C50	C 919	CKSQYB225K10
C 54	CKSRYB103K50	C 920	CCSRCH270J50
C 55	CKSRYB104K16	C 921	CCSRCH270J50
C 56	CKSRYB104K16	C 922	CKSYB105K16
C 58	CKSQYB224K16	C 923	CKSRYB103K50
C 101	CEALNP100M10	 Unit Number : CWM6793 Unit Name : Keyboard Unit (DEH-P410/X1N/UC, DEH-P4100/X1N/UC)	
C 102	CCSRCH151J50		
C 103	CKSRYB473K16	MISCELLANEOUS	
C 105	CKSRYB682K25	IC 1801	IC
C 106	CEALR68M50	IC 1802	IC
C 107	CKSRYB103K50	D 1801	Diode Network
C 108	CKSQYB474K16	D 1802	Diode Network
C 109	CKSQYB474K16	D 1803	LED
C 110	CKSRYB104K16	D 1804	LED
C 111	CKSRYB104K16	D 1807	LED
C 112	CKSRYB104K16	D 1808	LED
C 113	CKSRYB123K25	D 1809	LED
C 114	CEAL220M6R3	D 1810	LED
C 115	CKSRYB473K16	D 1811	LED
C 116	CEAL2R2M50	D 1812	LED
C 117	CKSRYB102K50	D 1813	LED
C 120	CKSRYB183K25	X 1801	Radiator 5.00MHz
C 121	CKSRYB332K50	S 1801	Switch
C 122	CKSRYB562K25	PD6294A	
C 123	CKSRYB681K50	RS-140	
C 125	CKSRYB103K50	DA204U	
C 126	CKSRYB103K50	DA204U	
C 127	CEAL2R2M50	NSSW440-9159	
C 128	CKSRYB103K50	NSSW440-9159	
		NSSW440-9159	
		NSSW440-9159	
		CL220PGC	
		CL220PGC	
		CL170UBX	
		CL170PGCD	
		CL170PGCD	
		CSS1423	
		CSG1112	

DEH-P410,P4100,P310

====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
S 1802 Switch	CSG1112	D 1807 LED	NSSW440-9159
S 1803 Switch	CSG1112	D 1808 LED	NSSW440-9159
S 1804 Switch	CSG1112	D 1809 LED	CL220PGC
S 1805 Switch	CSG1112	D 1810 LED	CL220PGC
S 1806 Switch	CSG1112	D 1811 LED	CL170PGCD
S 1807 Switch	CSG1107	D 1812 LED	CL170PGCD
S 1808 Switch	CSG1112	D 1813 LED	CL170PGCD
S 1809 Switch	CSG1112	X 1801 Radiator 5.00MHz	CSS1423
S 1810 Switch	CSG1112	S 1801 Switch	CSG1112
S 1811 Switch	CSG1112	S 1802 Switch	CSG1112
S 1812 Switch	CSG1112	S 1803 Switch	CSG1112
S 1813 Switch	CSG1107	S 1804 Switch	CSG1112
S 1814 Switch	CSG1107	S 1805 Switch	CSG1112
S 1815 Switch	CSG1111	S 1806 Switch	CSG1112
S 1816 Switch	CSG1112	S 1807 Switch	CSG1107
S 1817 Switch	CSG1112	S 1808 Switch	CSG1112
S 1818 Switch	CSG1112	S 1809 Switch	CSG1112
S 1819 Switch	CSG1107	S 1810 Switch	CSG1112
S 1820 Switch	CSG1111	S 1811 Switch	CSG1112
S 1821 Switch	CSG1111	S 1812 Switch	CSG1112
S 1822 Switch LCD	CSG1111 CAW1561	S 1813 Switch	CSG1107
RESISTORS		S 1814 Switch	CSG1107
R 1801	RS1/8S222J	S 1815 Switch	CSG1111
R 1802	RS1/8S222J	S 1816 Switch	CSG1112
R 1803	RS1/10S472J	S 1817	CSG1112
R 1804	RS1/10S121J	S 1818 Switch	CSG1112
R 1805	RS1/10S2R2J	S 1819 Switch	CSG1107
R 1806	RS1/4S391J	S 1820 Switch	CSG1111
R 1808	RS1/4S391J	S 1821 Switch	CSG1111
R 1809	RS1/4S301J	S 1822 Switch	CSG1111
R 1810	RS1/4S301J	LCD	
R 1811	RS1/4S301J	CAW1571	
R 1812	RS1/4S301J	RESISTORS	
R 1813	RS1/4S301J	R 1801	RS1/8S222J
R 1814	RS1/4S301J	R 1802	RS1/8S222J
R 1815	RS1/4S431J	R 1803	RS1/10S472J
R 1816	RS1/4S431J	R 1806	RS1/4S391J
R 1817	RS1/4S511J	R 1808	RS1/4S391J
R 1819	RS1/10S0R0J	R 1809	RS1/4S301J
CAPACITORS		R 1810	RS1/4S301J
C 1801	CKSQYB104K50	R 1811	RS1/4S301J
C 1802	CSZSR100M6R3	R 1812	RS1/4S301J
C 1803	CKSQYB104K50	R 1813	RS1/4S301J
C 1804	CKSQYB104K50	R 1814	RS1/4S301J
C 1805	CKSQYB104K50	R 1815	RS1/4S431J
C 1806	CKSQYB104K50	R 1816	RS1/4S431J
C 1807	CKSQYB104K50	R 1817	RS1/4S821J
C 1808	CKSQYB104K50	R 1818	RS1/10S103J
C 1811	CKSQYB104K50	R 1819	RS1/10S0R0J
C 1812	CKSQYB104K50	R 1821	RS1/4S272J
C 1813	CKSQYB104K50	CAPACITORS	
Unit Number : CWM6794		C 1801	CKSQYB104K50
Unit Name : Keyboard Unit		C 1803	CKSQYB104K50
(DEH-P310/X1N/UC)		C 1804	CKSQYB104K50
MISCELLANEOUS		C 1805	CKSQYB104K50
IC 1801 IC	PD6294A	C 1806	CKSQYB104K50
D 1801 Diode Network	DA204U	C 1807	CKSQYB104K50
D 1802 Diode Network	DA204U	C 1808	CKSQYB104K50
D 1803 LED	NSSW440-9159	C 1811	CKSQYB104K50
D 1804 LED	NSSW440-9159	C 1812	CKSQYB104K50

====Circuit Symbol and No.==Part Name

Part No.

D Unit Number : CWX2411
Unit Name : Control Unit

MISCELLANEOUS

IC	201	IC	UPD63711GC
IC	301	IC	BA5985FM
IC	701	IC	BA05SFP
Q	101	Transistor	2SB1132
D	801	LED	CL200IRX
D	802	LED	CL200IRX
X	201	Ceramic Oscillator 16.934MHz	CSS1456
S	801	Spring Switch(HOME)	CSN1051
S	802	Spring Switch(CLAMP)	CSN1052

RESISTORS

R	101	RS1/8S120J
R	102	RS1/8S100J
R	103	RS1/16S222J
R	201	RS1/16S104J
R	202	RS1/16S103J
R	203	RS1/16S393J
R	204	RS1/16S103J
R	205	RS1/16S103J
R	206	RS1/16S182J
R	207	RS1/16S123J
R	302	RS1/16S153J
R	303	RS1/16S103J
R	501	RS1/16S102J
R	502	RA4C681J
R	601	RS1/16S102J
R	602	RS1/16S102J
R	605	RS1/16S0R0J
R	606	RS1/16S0R0J
R	801	RS1/8S751J
R	803	RS1/8S751J
R	902	RS1/16S0R0J
R	906	RS1/16S0R0J

CAPACITORS

C	101	CCSRCH102J25
C	102	CKSRYB104K16
C	103	CEV101M6R3
C	104	CEV470M6R3
C	105	CKSQYB334K16
C	106	CKSQYB334K16
C	107	CKSQYB334K16
C	201	CKSRYB104K16
C	202	CKSRYB471K50
C	203	CKSRYB104K16
C	205	CEV101M6R3
C	206	CKSRYB104K16
C	207	CKSRYB104K16
C	208	CKSRYB104K16
C	209	CKSRYB104K16
C	210	CKSRYB332K50
C	211	CKSRYB104K16
C	212	CKSRYB104K16
C	213	CKSRYB392K50
C	214	CKSRYB104K16
C	215	CKSRYB104K16
C	216	CCSRCJ3R0C50
C	217	CCSRCH270J50
C	218	CKSRYB104K16
C	219	CCSRCH181J50

====Circuit Symbol and No.==Part Name

Part No.

C	220	CCSRCH510J50
C	221	CKSRYB682K25
C	222	CEV220M6R3
C	223	CKSRYB103K25
C	224	CKSRYB224K10
C	301	CEV101M10
C	603	CCSOSL152J50
C	604	CCSOSL152J50
C	702	CCH1349
C	703	CKSQYB334K16

E Unit Number :
Unit Name : Photo Unit(S8)

Q	1	Photo-transistor	CPT230SX-TU
Q	2	Photo-transistor	CPT230SX-TU

Miscellaneous Parts List

M	1	Pickup Unit(Service)(P8)	CXX1285
M	1	Motor Unit(CARRIAGE)	CXB2190
M	2	Motor Unit(LOADING)	CXB2195
M	3	Motor Unit(SPINDLE)	CXB2562
		Fuse(10A)	CEK1136

6. ADJUSTMENT

6.1 CD ADJUSTMENT

1) Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.

If REFO and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.

Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.

Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.

If by accident REFO comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.
- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.
- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit. Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.

*During PLAY, even if the eject button is pressed, the disc will not be ejected and the unit will remain in the PLAY mode.

*The unit will not load a disc.

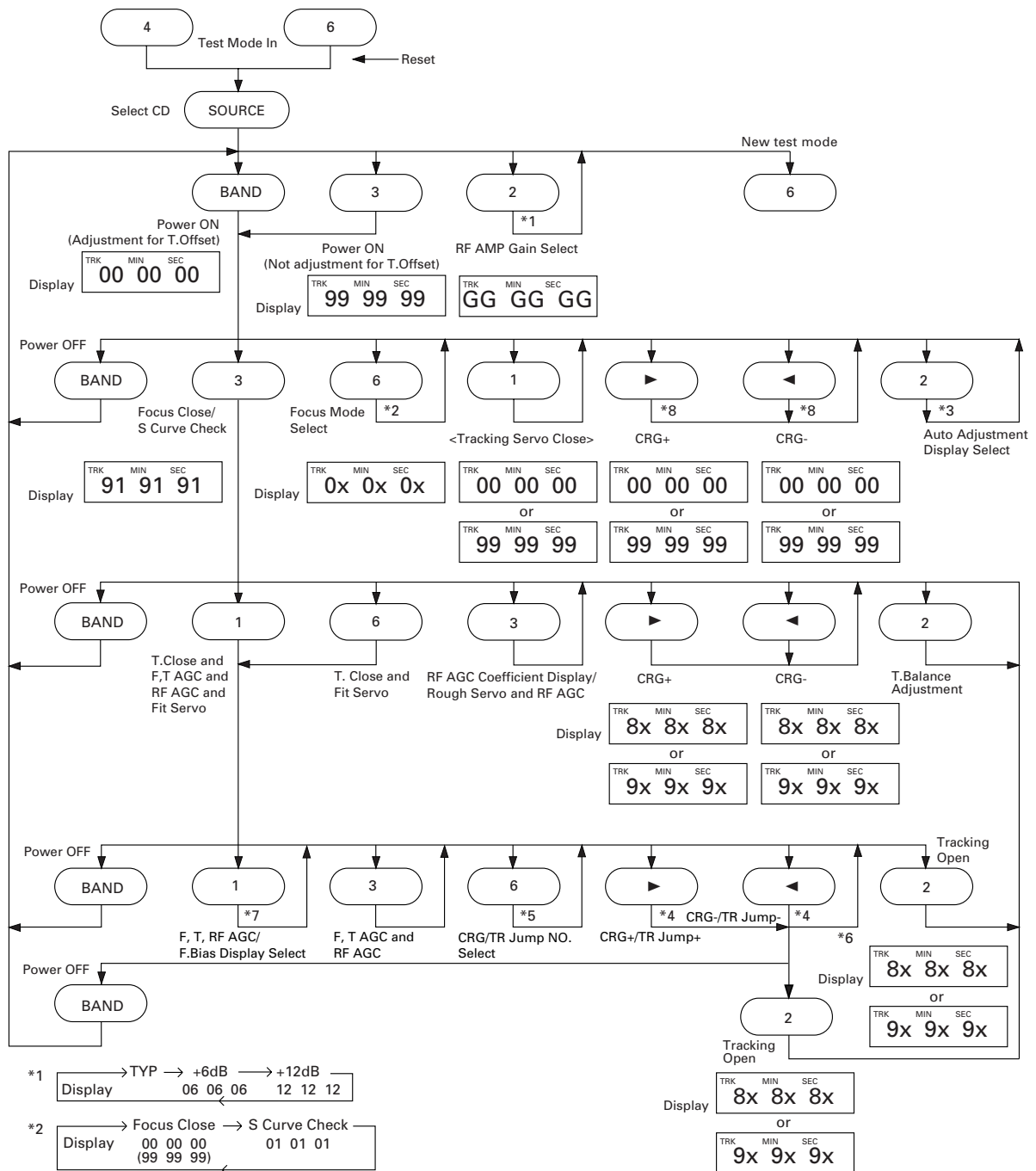
When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.

2) Test Mode

This mode is used for adjusting the CD mechanism module of the device.

- Test mode starting procedure
Reset while pressing the **4** and **6** keys together.
- Test mode cancellation
Switch ACC, back-up OFF.
- After pressing the EJECT key, do not press any other key until the disk is completely ejected.
- If the ► or ◀ key is pressed while focus search is in progress, immediately turn the power off (otherwise the actuator may be damaged due to adhesion of the lenses).
- Jump operation of TRs other than 100TR continues after releasing the key. CRG move and 100TR jump operations are brought into the "Tracking close" status when the key is released.
- Powering Off/On resets the jump mode to "Single TR (91)", the RF AMP gain setting to 0 dB, and the automatic adjustment value to the initial value.

● Flow Chart



*1 → TYP → +6dB → +12dB
Display TRK MIN SEC 06 06 06 12 12 12

*2 → Focus Close → S Curve Check
Display TRK MIN SEC 00 00 00 01 01 01
(99 99 99)

*3 → F.Offset Display → RF.Offset Display → F.Cancel Display
[F.Cancel Value = {Top Rank 8bit of Set Value (7F [H] to 80 [H]) + 128} / 4
= 63 [D] to (32 [D]) to 00 [D]

*4 Single TR/32TR/100TR

*5 → Single TR → 32TRK → 100TRK → CRG Move
Display TRK MIN SEC 9x(8x):91(81) 92(82) 93(83) 94(84)

*6 CRG Move, 100TR Jump Only

*7 → TRK, MIN, SEC → F.AGC Gain → T.AGC Gain → RF AGC Gain
(F,T.AGC Gain = (Present Value/Initial Value) × 20)

*8 Voltage of CRG Motor = 2 [V]

6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

• Note :

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• Purpose :

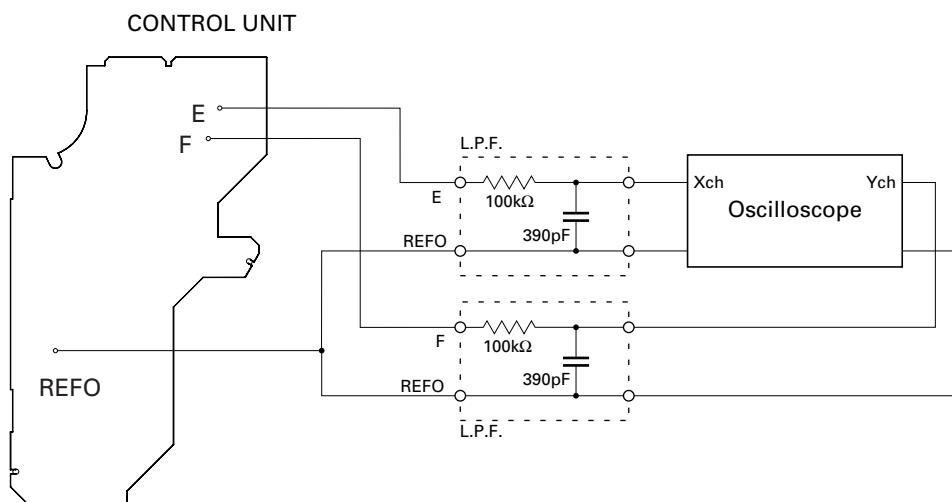
To check that the grating is within an acceptable range when the PU unit is changed.

• Symptoms of Mal-adjustment :

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• Method :

- | | |
|-----------------------|----------------------------|
| • Measuring Equipment | • Oscilloscope, Two L.P.F. |
| • Measuring Points | • E, F, REFOUT |
| • Disc | • ABEX TCD-784 |
| • Mode | • TEST MODE |



• Checking Procedure

1. In test mode, load the disc and switch the 5V regulator on.
2. Using the ► and ◄ buttons, move the PU unit to the innermost track.
3. Press key **3** to close focus, the display should read "91". Press key **2** to implement the tracking balance adjustment the display should now read "81". Press key **3** 2 times. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75°. Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

• Note

Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• Hint

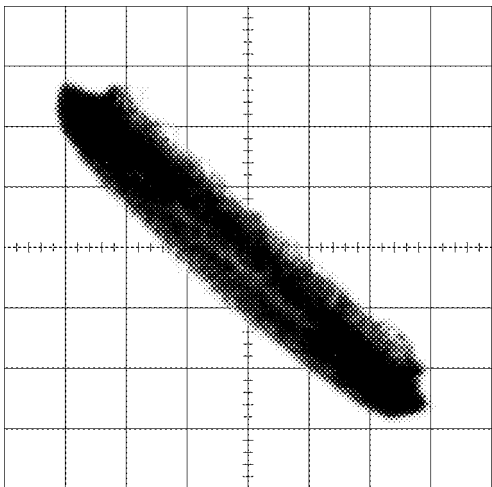
Reloading the disc changes the clamp position and may decrease the "wobble".

Grating waveform

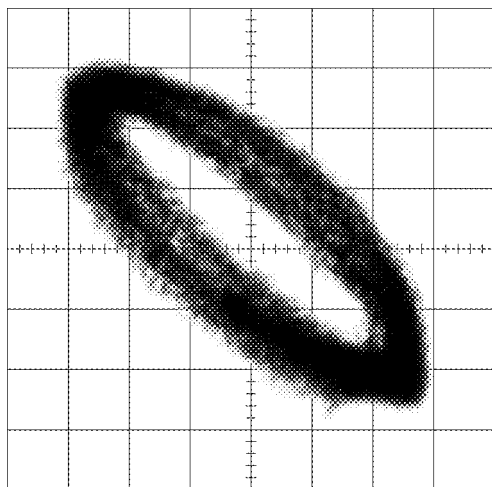
Ech → Xch 20mV/div, AC

Fch → Ych 20mV/div, AC

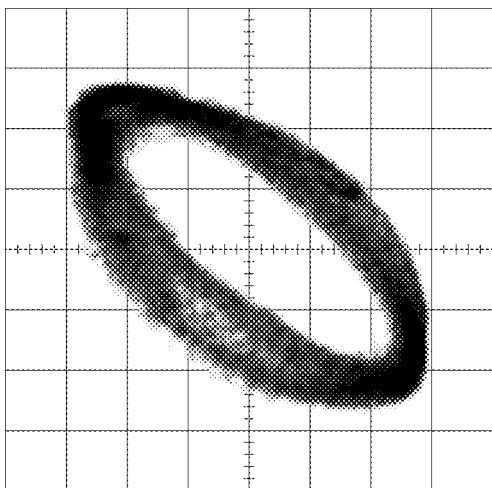
0°



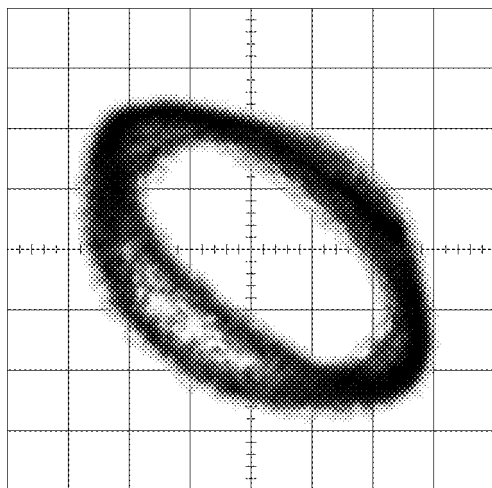
30°



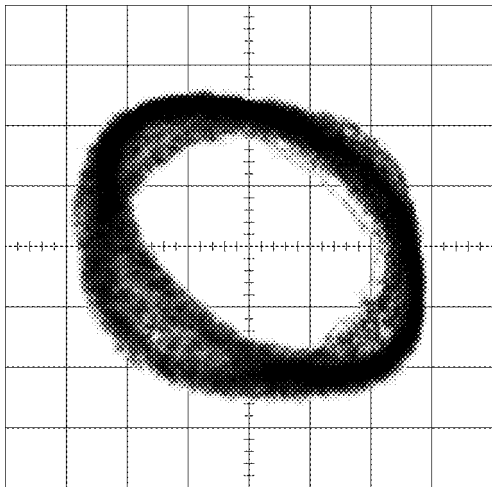
45°



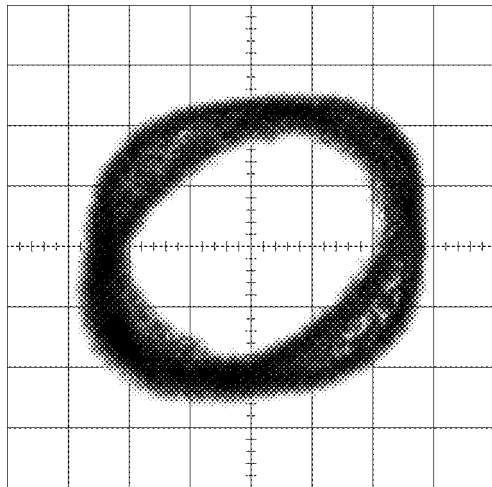
60°



75°



90°



7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx
	OR	
	Err-xx	

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations.
		Subcode NG	A disc not containing CD-R data is found. Turned over disc are found, though rarely. → Failure on home switch or CRG move mechanism.
		RF AMP NG	An appropriate RF AMP gain can't be determined. → CD signal error.
17	Electricity	Setup NG	APC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

A newly designed head unit must conform to the example given above.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, 3x: Search relevant errors, Ax: Other errors.

● New Test Mode

S-CD plays the same way as before.

If an error such as off focus, spindle unlocking, unreadable sub-code, or sound skipping occurs after setup, its cause and time occurred (in absolute time) are displayed.

During setup, operational status of the control software (internal RAM: CPOINT) is displayed.

These displays and functions are prepared for enhancing aging in the servicing and efficiency of trouble analysis.

(1) Shifting to the New Test Mode

- ① Turn on the current test mode by starting the reset from the key.
 - ② Select S-CD for the source through the specified procedure including use of the [SOURCE] key, and inserting the disc. Then, press the [Jump Mode Selector] key while maintaining the regulator turned off.
 - ③ After the above operations, the new test mode remains on irrespective of whether the S-CD is turned on or off.
- You can reset the new test mode by turning on the reset start.

* With some products, the new test mode can be reset through the same operations as that employed for shifting to the STBY mode (while maintaining the Acc turned off).

(2) Key Correspondence

Key (Example)	Test mode		New test mode	
	Power Off	Power On	In-play	Error Production
BAND	To power on (offset adjustment performed)	To power off	—	Time/Err.No. switching
▶	—	FWD-Kick	FF/TR+	—
◀	—	REV-Kick	REV/TR-	—
1	—	T.Close (AGC performed) /parameter display switching	Scan	—
2	RF AMP gain switching	Parameter display switching /T.BAL adjustment/T.Open	Mode	—
3	To power on (offset adjustment not performed)	F.Close/RF AGC/F.T.AGC	—	—
6	—	F.Mode switching /T.Close (no AGC)/Jump switching	Auto/Manu	T.No./Time switching

Note: Eject and CD on/off is performed in the same procedure as that for the normal mode.

(3) Cause of Error and Error Code

Code	Class	Contents	Description and cause
40	Electricity	Off focus detected.	FOK goes low. → Damages/stains on disc, vibrations or failure on servo.
41	Electricity	Spindle unlocked.	FOK = Low continued for 50 msec. → Damages/stains on disc, vibrations or failure on servo.
42	Electricity	Sub-code unreadable.	Sub-code was unreadable for 50 msec. → Damages/stains on disc, vibrations or failure on servo.
43	Electricity	Sound skipping detected.	Last address memory function was activated. → Damages/stains on disc, vibrations or failure on servo.

Note: Mechanical errors during aging are not displayed.

The error codes should be indicated in the same way as in the normal mode.

(4) Display of Operational Status (CPOINT) during Setup

Status No.	Contents	Protective action
00	CD+5V ON process in progress.	None
01	Servo LSI initialization (1/3) in progress.	None
02	Servo LSI CRAM initialization in progress.	None
03	Servo LSI initialization (2/3) in progress.	None
04	Offset adjustment (1/3) in progress.	None
05	Offset adjustment (2/3) in progress.	None
06	Offset adjustment (3/3) in progress.	None
07	FZD adjustment in progress.	None
08	Servo LSI initialization (3/3) in progress.	None
10	Carriage move to home position started.	None
11	Carriage move to home position started.	None
12	Carriage is moving toward inner diameter.	Specified 10 seconds has been passed or failure on home switch.
13	Carriage is moving toward outer diameter.	Specified 10 seconds has been passed or failure on home switch.
14	Carriage outer kick in progress.	None
15	Carriage outer diameter feed (1 second) in progress.	None
20	Servo close started.	None
21	Pre-processing for focus search started.	None
22	Spindle rotation and focus search started.	None
23	Waiting for focus close (XSI=Low).	Specified focus search time has been passed.
24	Standing by after focus close is over.	Specified focus search time has been passed.
25	Focus search preprocessing is in progress while setup protection is turned on.	None
26	Focus search preprocessing is in progress while focus recovery is turned on.	None
27	Wait time after focus close is set up.	Off focus.
28	Standing by after focus close is over.	Off focus.
29	Setup (1/2) before T balance adjustment is started.	Off focus.
30	Setup (2/2) before T balance adjustment is started.	Off focus.
31	T balance adjustment started.	Off focus.
32	T balance adjustment (1/2).	Off focus.
33	T balance adjustment (2/2).	Off focus.
34	Waiting for spindle rotation to end. Spindle rough servo.	Off focus.
35	Standing by after spindle rough servo is over.	Off focus.
36	RF AGC started.	Off focus.
37	RF AGC started.	Off focus.
38	RF AGC ending process in progress.	Off focus.
39	Tracking close in progress.	Off focus.
40	Standing by after tracking is closed. Carriage closing in progress.	Off focus.
41	Focus/tracking AGC started.	Off focus.
42	Focus AGC started.	Off focus.
43	Focus AGC in progress.	Off focus.
44	Tracking AGC in progress.	Off focus.
45	Standing by after focus/tracking AGC are over.	Off focus.
46	Spindle processes applicable servo.	Off focus.
47	Check for servo close is started.	Off focus.
48	Check of LOCK pin started.	Off focus or spindle not locked.
49	RF AGC started.	Off focus.
50	RF AGC in progress.	Off focus.
51	Standing by after RF AGC is over.	Off focus.

(5) Display Examples

1) During Setup (When status no. = 11)

TRK No.	MIN.	SEC.
11	11'	11"

2) During Operation (TOC read, TRK search, Play, FF and REV)

The same as in the normal mode.

3) When a Protection Error Occurred

Switch to the following displays (A) and (B) using the [BAND] switch:

(A) Error occurrence timing display in absolute time.

An example: Error occurred in 12th tune at 34'56" in absolute time.

TRK No.	MIN.	SEC.
12	34'	56"

(B) Error No. display

An example: Error #40 (Off focus is detected)

ERROR-40

7.1.2 DISASSEMBLY

● Removing the Case Unit(not shown)

1.Remove the Case Unit.

● Removing the Panel Assy(Fig.1)

➡ 1 Disengage the stoppers at two locations.

➡ 2 Remove the Panel Assy.

● Removing the CD Mechanism Module (not shown)

1.Remove the four screws.

2.Disconnect the connector, and then remove the CD Mechanism Module.

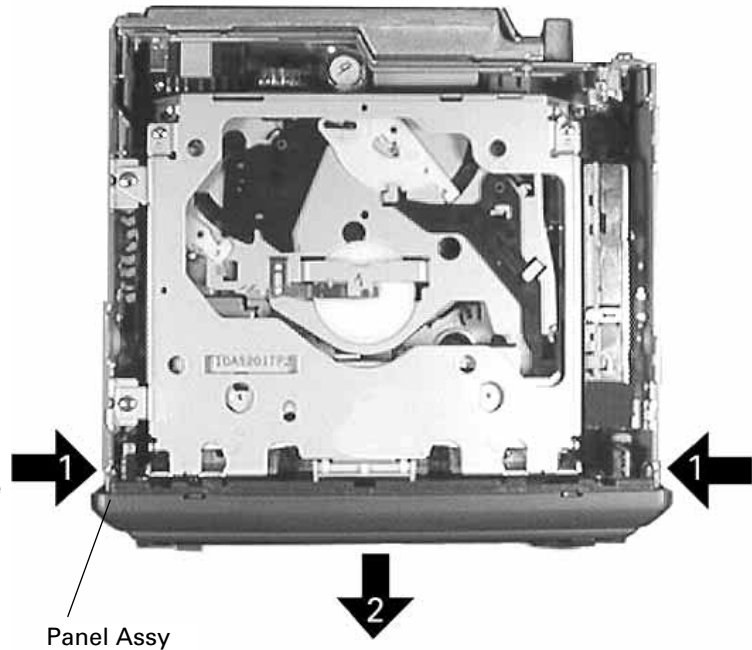


Fig.1

● Removing the Tuner Amp Unit(Fig.2)

➡ 1 Remove the two screws.

➡ 2 Remove the three screws.

➡ 3 Remove the screw.

➡ 4 Straighten the tabs at four locations indicated.
Remove the Tuner Amp Unit.

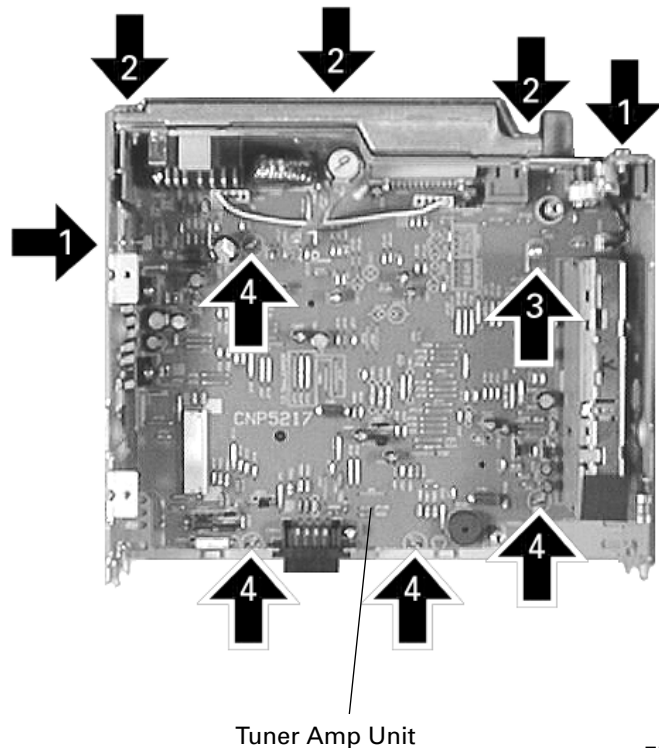
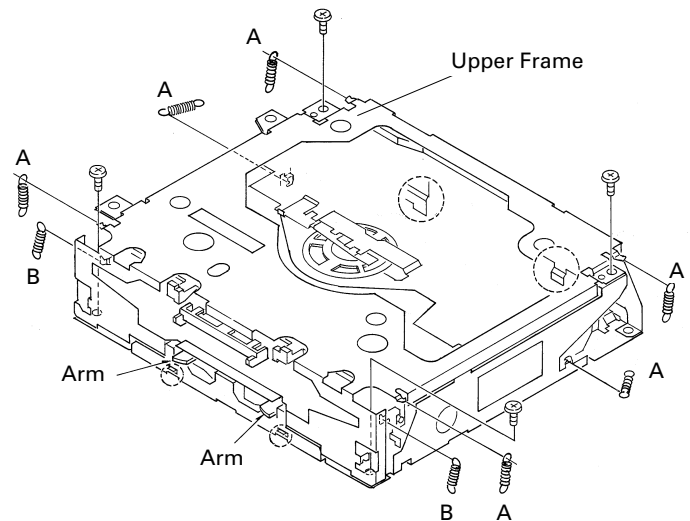


Fig.2

● Removing the Upper Frame

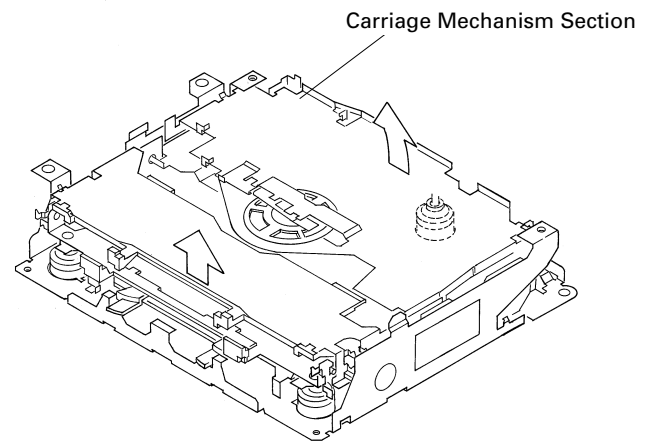
1. Remove six Springs A, two Springs B and four Screws.
2. Remove two Tabs situated on rear side of the Upper Frame, remove two Arms on the front side, then remove two Tabs on the front side.



● Removing the Carriage Mechanism

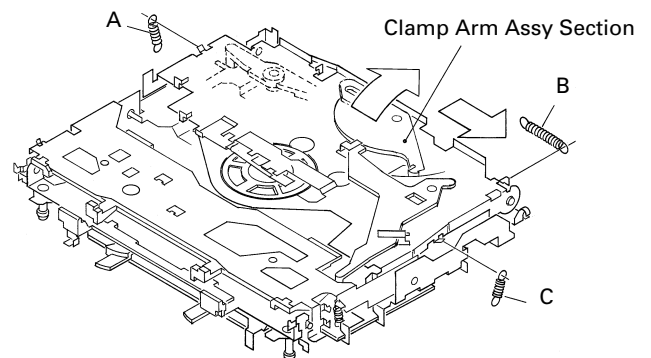
1. Disengage the Carriage Mechanism from the two dampers situated in the front side by driving it up, then disengage and remove the mechanism from the one damper by driving it up aslant into front side direction.

Note : When assembling the Carriage Mechanism, coat the dampers with alcohol prior to the assembly.



● Removing the Clamp Arm Assy

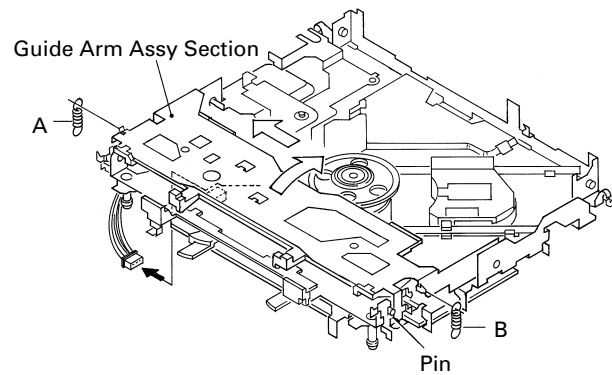
1. Remove a Spring A, a B and a Spring C.
2. Drive the Clamp Arm Assy up into rear side direction, then disengage the arm from its current position. Finally, drive the assembly approximately 45 degrees upward, then slide the assembly toward right side to remove it.



● Removing the Guide Arm Assy

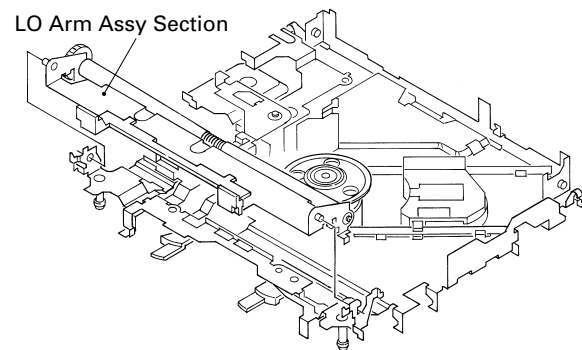
1. Remove a connector, a spring A and B
2. Drive the Guide Arm Assy up aslant into rear side direction, then remove it from a Pin. Finally, drive the assembly approximately 45 degrees upward, then slide the assembly toward left side to remove it.

Note : When assembling the guide arm assembly, route the cord inside the assembly. In this operation, care must be exercised so that cord may be caught by the gear.



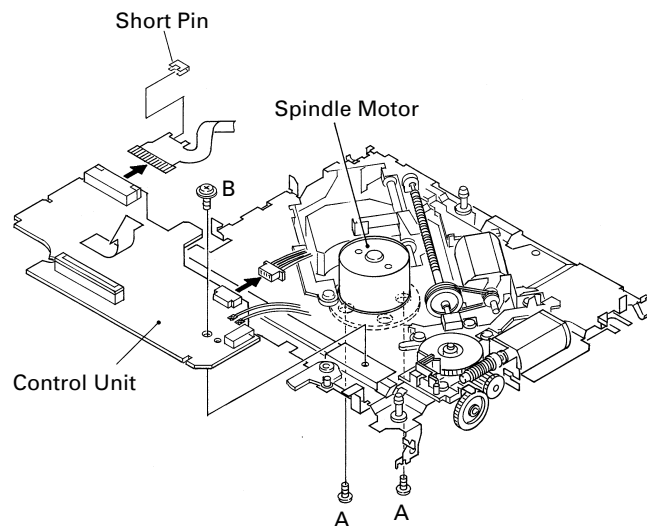
● Removing the LO Arm Assy

1. Remove two Pins to dismount the LO Arm Assy.



● Removing the Control Unit and the Spindle Motor

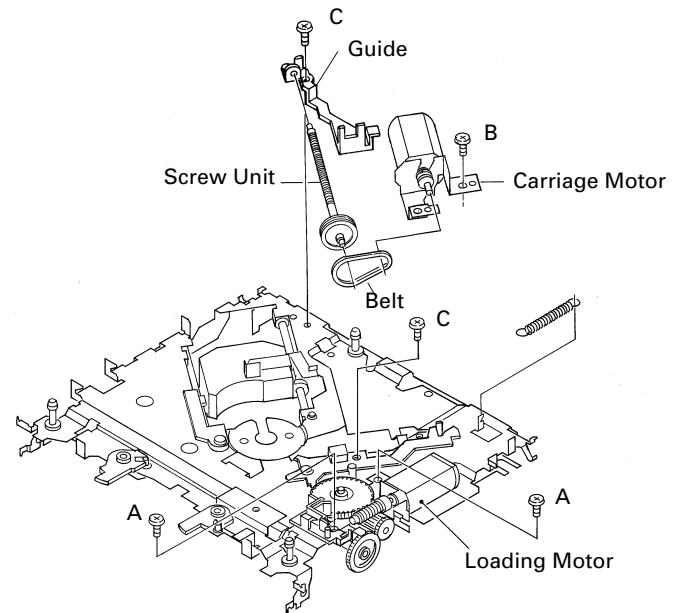
1. Remove from the connector after mounting the short pin on the flexible PCB of the pickup unit.
2. Remove two Soldered joints, then remove two Screws A.
3. Remove two connectors and a Screw B.
4. Disengage the Control Unit from two Tabs, then dismount the unit by sliding it toward left.
5. Dismount the Spindle Motor.



● Removing the Loading Motor and Carriage Motor

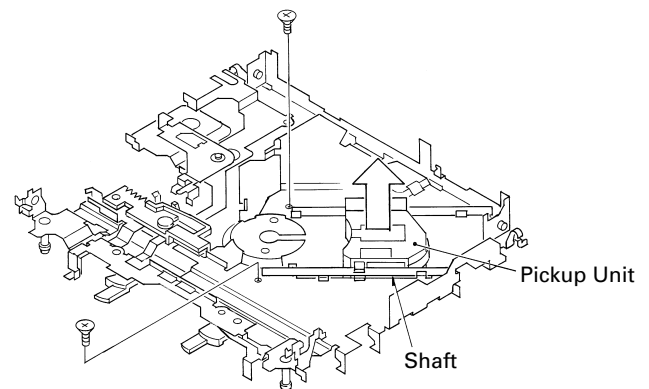
1. Remove the Spring and two Screws A.
2. Dismount the Loading Motor.
3. Remove the Belt, a Screw B, two Screws C, a Guide and a Screw Unit.
4. Dismount the Carriage Motor.

Note : When assembling the Belt, use care so that it may not be contaminated by grease.



● Removing the Pickup Unit

1. Remove two Screws and a Shaft.
2. Dismount the Pickup Unit.



7.1 PARTS

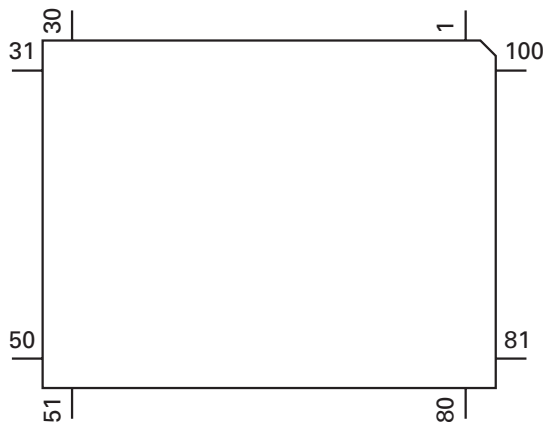
7.2.1 IC

● Pin Functions (PE5119A)

Pin No.	Pin Name	I/O	Function and Operation
1	DRSYS	O	Door system select output
2	DRSENS	I	Door open / close sense input
3	SYSPW	O	System power supply control output
4	DRELAY	O	External relay output
5	TESTIN	I	Test program mode input
6-9	NC		Not used
10	TUNPW	O	Tuner power control output
11	RESET	I	Reset input
12	XT2		Not used (open)
13	XT1		Not used (GND)
14	VSS		GND
15	X2		Crystal oscillator connection pin
16	X1		Crystal oscillator connection pin
17	REGOFF		Connect to VSS
18	REGC		Capacitor for regulator connect pin
19	VDD		Power supply
20	GRNILM	O	Green illumination select output
21	NC		Not used
22	ADPW	O	A/D converter power supply output
23	AMBILM	O	Amber illumination select output
24	IPPW	O	Power supply control output for IP BUS interface IC
25	ASENB	O	Slave power supply control output
26,27	NC		Not used
28	MUTE	O	System mute output
29	FM/AM	O	RDS decoder power select output
30	LOCL	O	LOCL output
31	LOCH	O	LOCH output
32	TUNPCE2	O	PLL IC chip enable output
33	VCK	O	Clock output for electronic volume
34	VST	O	Strobe pulse output for electronic volume
35	VDT	O	Data output for electronic volume
36,37	NC		Not used
38	SD	I	SD input
39	ST	I	FM stereo input
40	VSS		GND
41	VDD		Power supply
42-44	NC		Not used
45	CURRO	O	Tuner voltage FIX output
46-49	NC		Not used
50	DLED	O	Alarm LED output
51	SWVDD	O	Keyboard unit power supply control output
52	DSNS	I	Grille detach sense input
53	CONT	O	CD server driver power control output
54	CD5VON	O	CD +5V power control output
55	NC		Not used
56	VDCONT	O	CD VD power control output
57	CDMUTE	O	CD mute control output
58	CDEJET	O	CD eject control output
59	CDLOAD	O	CD LOAD motor loading control output
60	LOCK	I	CD spindle lock input
61	FOK	I	CD focus OK input
62	PCL	O	Clock adjustment output
63	MIRR	I	CD mirror detector input

Pin No.	Pin Name	I/O	Function and Operation
64	CLAMP	I	CD disc clamp sense input
65	X $\overline{\text{SCK}}$	O	CD LSI clock output
66	XSI	I	CD LSI data input
67	XSO	O	CD LSI data output
68	XA0	O	CD LSI command/data control output
69	X $\overline{\text{RST}}$	O	CD LSI reset output
70	X $\overline{\text{STB}}$	O	CD LSI strobe output
71	VCAOUT	O	Sub woofer electronic volume control output
72	SUBMUT	O	Sub woofer mute output
73	TEST	I	Test terminal
74	SL	I	Tuner signal level input
75	MODEL1	I	Model select input
76,77	NC		Not used
78	EJTSNS	I	CD disc EJECT position detect
79	DSCSNS	I	CD disc detect input
80	VDSSENS	I	CD VD over voltage / short-circuit sense input
81	TEMP	I	CD temperature sense input (CD)
82	(VDD)		A/D converter power supply terminal
83	(VDD)		A/D converter reference voltage terminal
84	(GND)		A/D converter GND
85	RX	I	IP BUS data input
86	TX	O	IP BUS data output
87	GND		GND
88	LDET	I	RDS PLL lock sense input
89-90	NC		Not used
91	SRVCNT		Not used
92	ASENS	I	ACC power sense input
93	BSENS	I	Back up power sense input
94	TUNPDI	I	PLL IC data input
95	KEYDT	I	Key data input
96	DPDT	O	Display data output
97	TUNPCK	O	PLL IC clock output
98	TUNPDO	O	PLL IC data output
99	TUNPCE	O	PLL IC chip enable
100	PEE	O	Beep tone output

*PE5119A



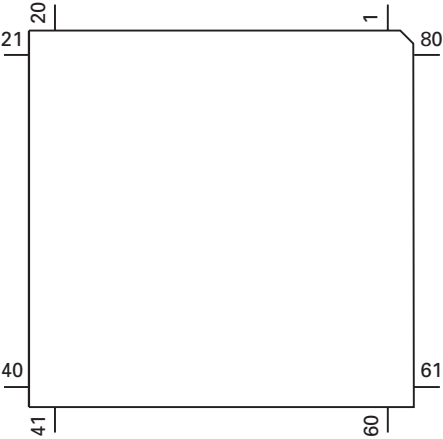
IC's marked by* are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.

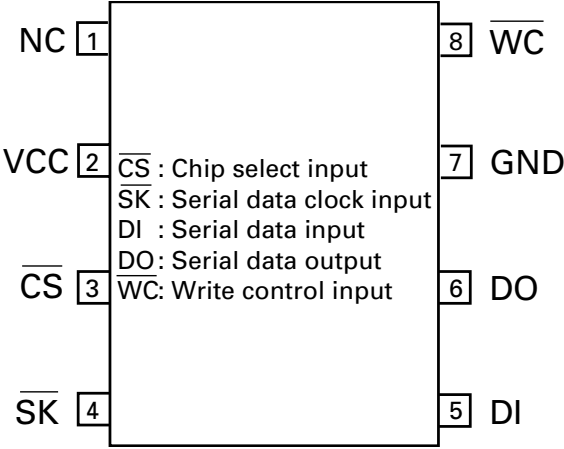
● Pin Functions (PD6294A)

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	NC		Not used
5,6	MOD1,0	I	Connect to GND
7	NC		Not used
8	KYDT	O	Key data output
9	DPDT	I	Display data input
10	REMIN	I	Remote control pulse input
11,12	NC		Not used
13-16	KD4-KD1	I	Key data input
17-22	KST6-KST1	O	Key strobe output
23	VDD		VDD
24-73	SEG49-0	O	LCD segment output
74-77	COM3-0	O	LCD common output
78	VLCD	I	LCD voltage input
79,80	V2,V1		Power supply terminal

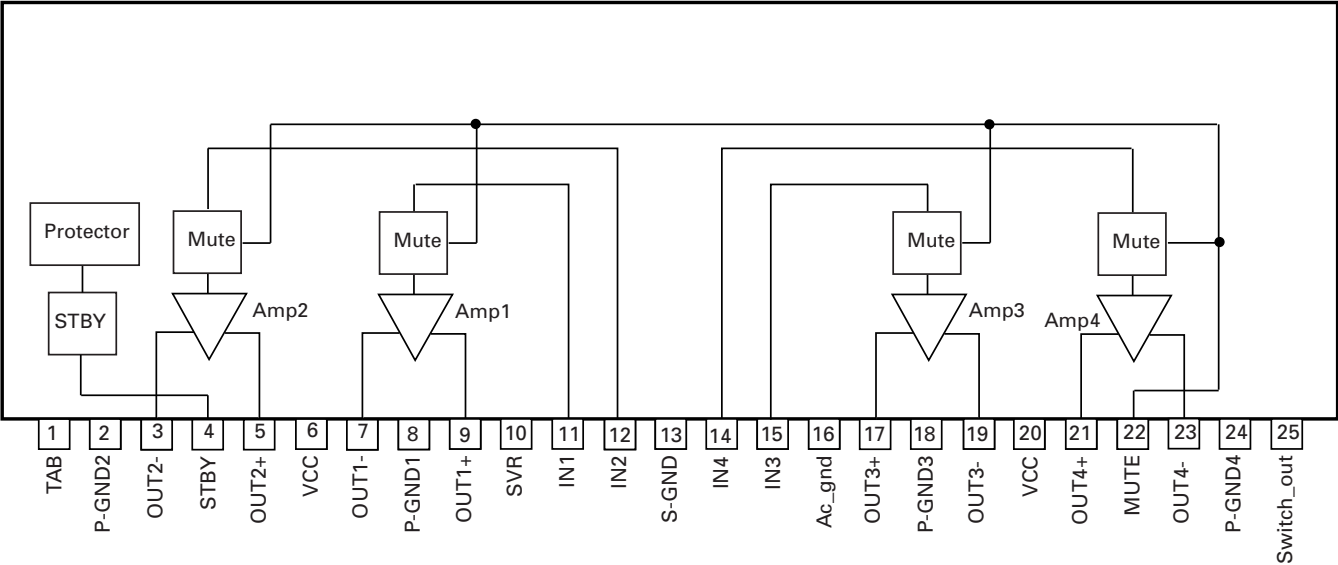
*PD6294A



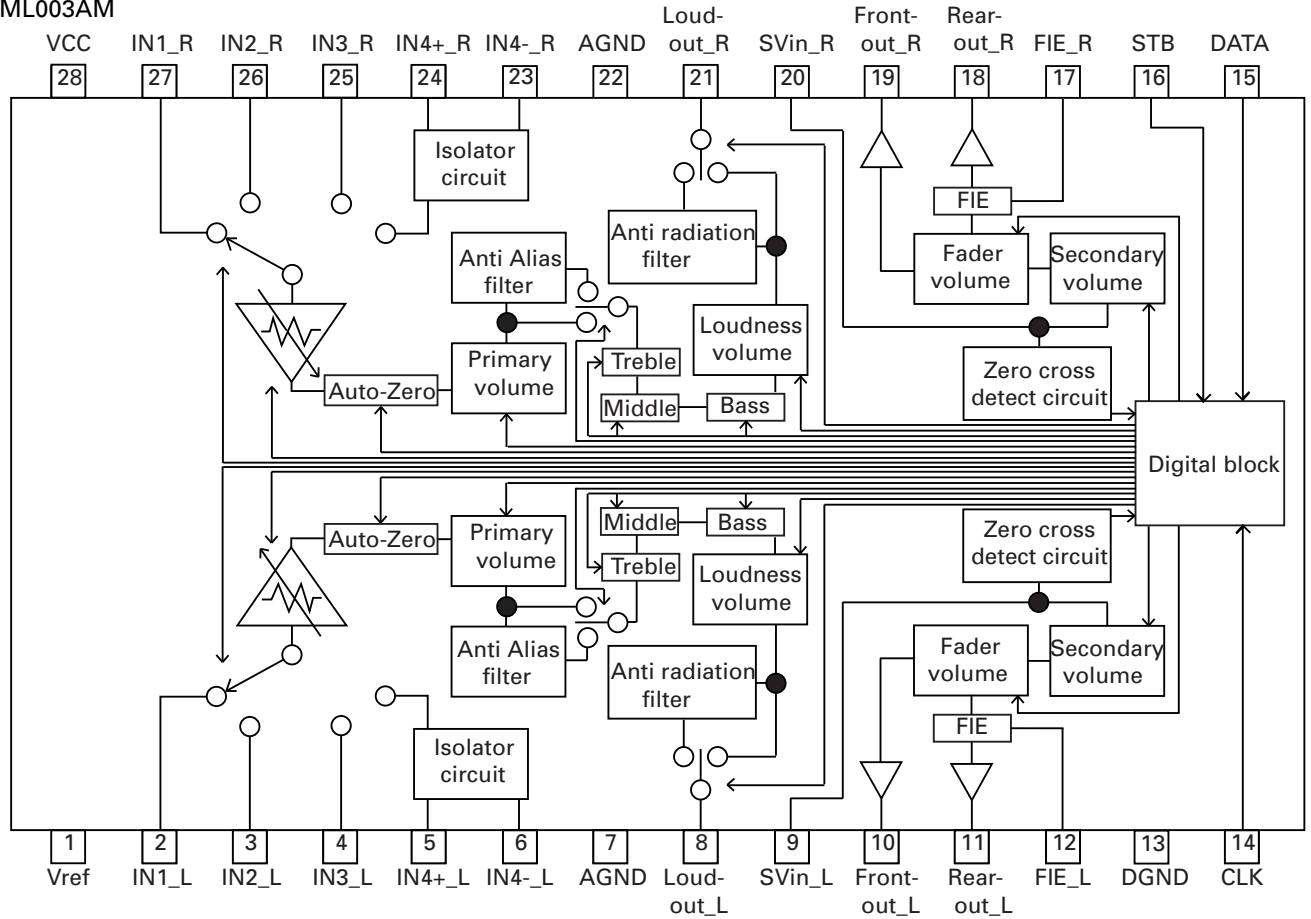
BR9010FV



PAL005A



PML003AM

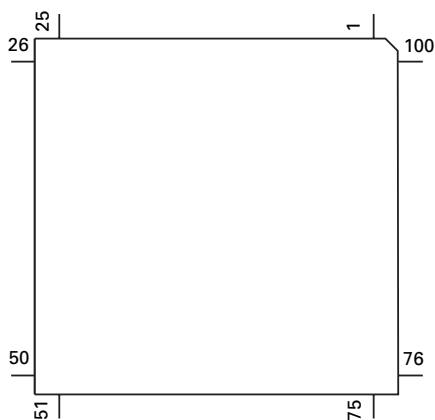


● Pin Functions (UPD63711GC)

Pin No.	Pin Name	I/O	Function and Operation
1	D.GND		Logic circuit GND
2	RFOK	O	RFOK signal output
3	RST	I	Reset signal input
4	A0	I	Command/parameter identification signal input
5	STB	I	Data strobe signal input
6	SCK	I	Clock signal input for serial data input/output
7	SO	O	Serial data and status signal output
8	SI	I	Serial data input
9	XTALEN	I	Crystal oscillation control pin
10	D.VDD		Positive power supply terminal to logic circuit
11	DA.VDD		Positive power supply terminal to D/A converter
12	R_OUT	O	Right channel audio output signal
13	DA.GND		D/A converter GND
14	REGC	I	The outside putting capacitor connection pin for SCF regulator
15	DA.GND		D/A converter GND
16	L_OUT	O	Left channel audio output signal
17	DA.VDD		Positive power supply terminal to D/A converter
18	R+	O	Right channel audio data output
19	R-	O	Right channel audio data output
20	L-	O	Left channel audio data output
21	L+	O	Left channel audio data output
22	X.VDD		Positive power supply terminal to crystal oscillation circuit
23	XTAL	I	Crystal oscillator connect pin
24	XTAL	O	Crystal oscillator connect pin
25	X.GND		Crystal oscillation circuit GND
26	D.VDD		Positive power supply terminal to logic circuit
27	EMPH	O	Output pin for the pre-emphasis data in the sub-Q code
28	FLAG	O	Flag output pin to indicate that audio data currently being output consists of noncorrectable data
29	DIN	I	Serial data input to internal DAC
30	DOUT	O	Serial audio data output
31	SCKIN	I	Serial clock input to internal DAC
32	SCKO	O	Audio data that is output from DOUT changes at rising edge of this clock
33	LRCKIN	I	LRCK signal input to internal DAC
34	LRCK	O	Signals to distinguish the right and left channels of the audio data output from DOUT
35	HOLD	O	Defect detection output
36	TX	O	Digital audio interface data output
37	D.GND		Logic circuit GND
38	C16M	O	Oscillator clock buffering output
39	LIMIT	I	Status of the pin is output at Bit 5 of the status output
40	D.VDD		Positive power supply terminal to logic circuit
41	LOCK	O	EFM synchronous detection signal
42	RFCK	O	Frame synchronous signal of XTAL-system
43	MIRR	O	MIRR output
44	PLCK	O	Monitor pin of bit clock
45	D.GND		Logic circuit GND
46	C1D1	O	Output pin for indicating the C1 error correction results
47	C1D2	O	Output pin for indicating the C1 error correction results
48	C2D1	O	Output pin for indicating the C2 error correction results
49	C2D2	O	Output pin for indicating the C2 error correction results
50	C2D3	O	Output pin for indicating the C2 error correction results
51	D.VDD		Positive power supply terminal to logic circuit
52	PACK	O	CD-TEXT PACK synchronous signal
53	TSO	O	CD-TEXT data serial output
54	TSI	I	CD-TEXT control parameter serial input
55	TSCK	I	CD-TEXT serial clock input
56	TSTB	I	CD-TEXT parameter strobe signal input
57	D.GND		Logic circuit GND

Pin No.	Pin Name	I/O	Function and Operation
58	TEST0	I	Test pin
59	TEST1	I	Test pin
60	ATEST	O	Test pin
61	A.GND		Analog circuit GND
62	FD	O	Focus drive output
63	TD	O	Tracking drive output
64	SD	O	Sled drive output
65	MD	O	Spindle drive output
66	DAC0	O	DAC output for adjustment
67	DAC1	O	DAC output for adjustment
68	DAC2	O	DAC output for adjustment
69	DAC3	O	DAC output for adjustment
70	A.VDD		Positive power supply terminal to analog circuit
71	EFM	O	EFM signal output
72	ASY	I	EFM comparator reference voltage input
73	C3T		3T detection capacitor additional pin
74	RFI	I	RF signal input for EFM data regulation
75	AGCO	O	RF signal output of after gain adjustment
76	AGCI	I	RF-AGC amplifier input
77	RFO	O	RF summing amplifier output
78	EQ2		RF amplifier equalizer parts additional pin
79	EQ1		RF amplifier equalizer parts additional pin
80	RF-	I	RF summing amplifier inverted input
81	A.GND		Analog circuit GND
82	A	I	Photo detector A input
83	C	I	Photo detector C input
84	B	I	Photo detector B input
85	D	I	Photo detector D input
86	F	I	Photo detector F input
87	E	I	Photo detector E input
88	A.VDD		Positive power supply terminal to analog circuit
89	REFOUT	O	Reference electric potential output
90	FE-	I	Focus error amplifier inverted input
91	FEO	O	Focus error amplifier output
92	TE-	I	Tracking error amplifier inverted input
93	TEO	O	Tracking error amplifier output
94	TE2	O	Tracking error output of after amplification
95	TEC	I	Tracking comparator input
96	A.GND		Analog circuit GND
97	PD	I	PD detection signal input for LD output monitor
98	LD	O	LD control current output
99	PN	I	APC circuit control polarity set pin
100	A.VDD		Positive power supply terminal to analog circuit

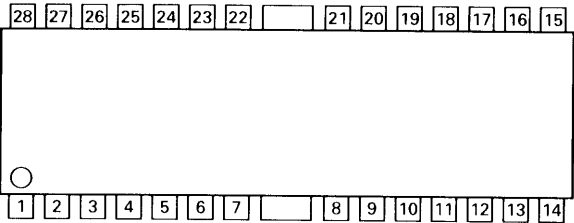
*UPD63711GC



● Pin Functions (BA5985FM)

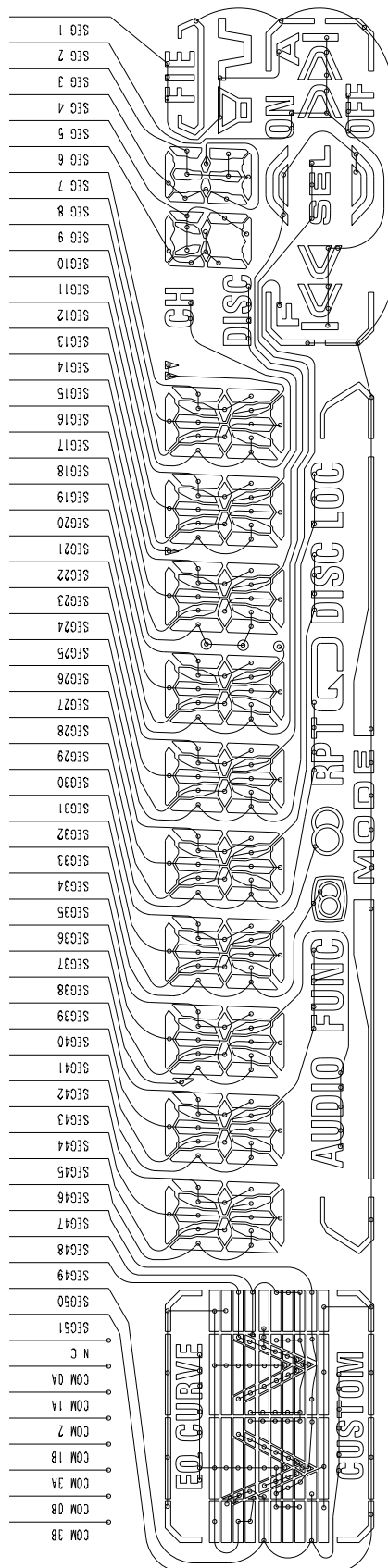
Pin No.	Pin Name	I/O	Function and Operation
1	FWD	I	Loading driver FWD input
2	OPIN1(+)	I	CH1 pre-amplifier input
3	OPIN1(−)	I	CH1 pre-amplifier inverted input
4	OPOUT1	O	CH1 pre-amplifier output
5	OPIN2(+)	I	CH2 pre-amplifier input
6	OPIN2(−)	I	CH2 pre-amplifier inverted input
7	OPOUT2	O	CH2 pre-amplifier output
8	VCC		Power supply
9	VOL(−)	O	Loading driver negative output
10	VOL(+)	O	Loading driver positive output
11	VO2(−)	O	Driver CH2 negative output
12	VO2(+)	O	Driver CH2 positive output
13	VO1(−)	O	Driver CH1 negative output
14	VO1(+)	O	Driver CH1 positive output
15	VO4(+)	O	Driver CH4 positive output
16	VO4(−)	O	Driver CH4 negative output
17	VO3(+)	O	Driver CH3 positive output
18	VO3(−)	O	Driver CH3 negative output
19	GND		GND
20	BIAS	I	Bias input
21	MUTE		Mute control
22	OPOUT3	O	CH3 pre-amplifier output
23	OPIN3(−)	I	CH3 pre-amplifier inverted input
24	OPIN3(+)	I	CH3 pre-amplifier input
25	OPOUT4	O	CH4 pre-amplifier output
26	OPIN4(−)	I	CH4 pre-amplifier inverted input
27	OPIN4(+)	I	CH4 pre-amplifier input
28	REV	I	Loading driver REV input

BA5985FM

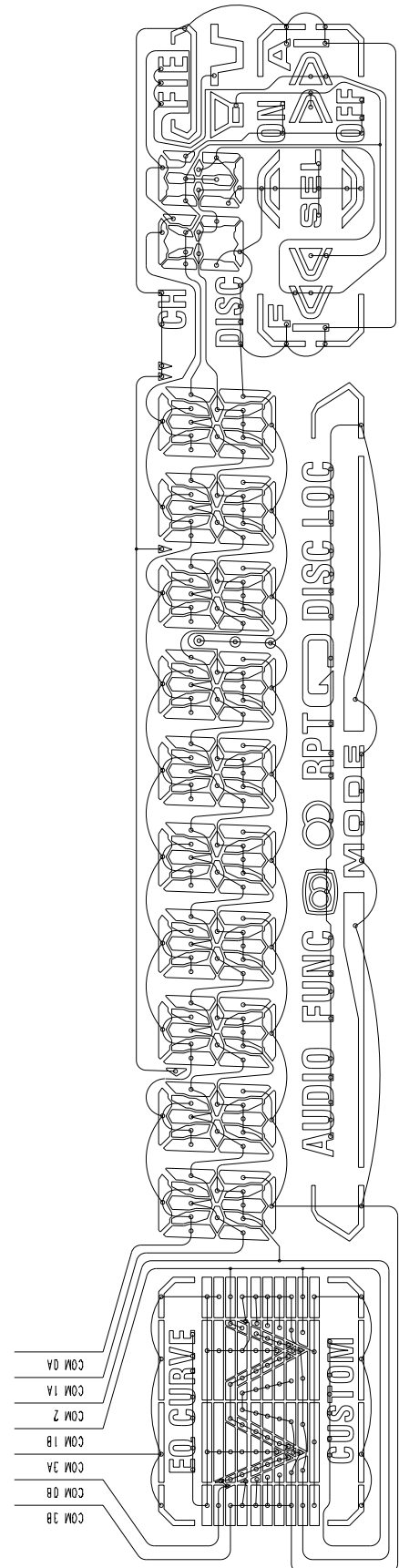


7.2.2 DISPLAY

● CAW1561, CAW1571

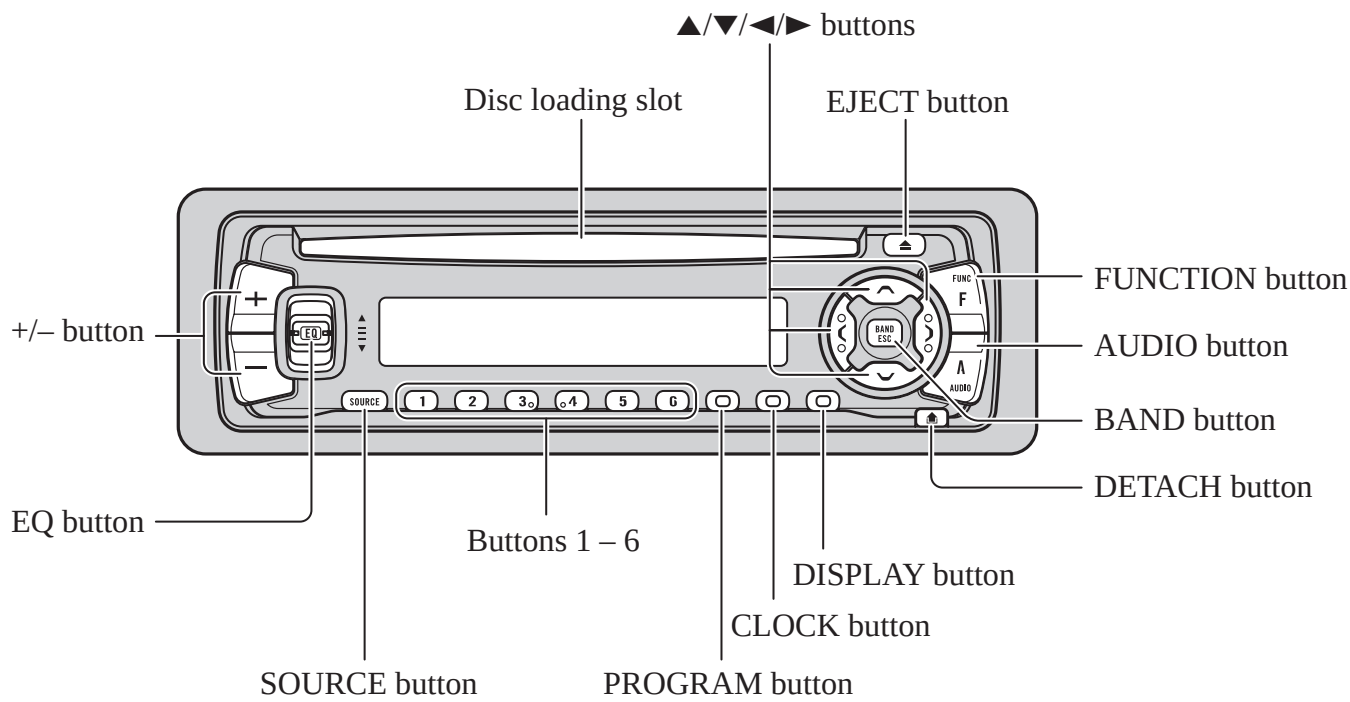


COMMON



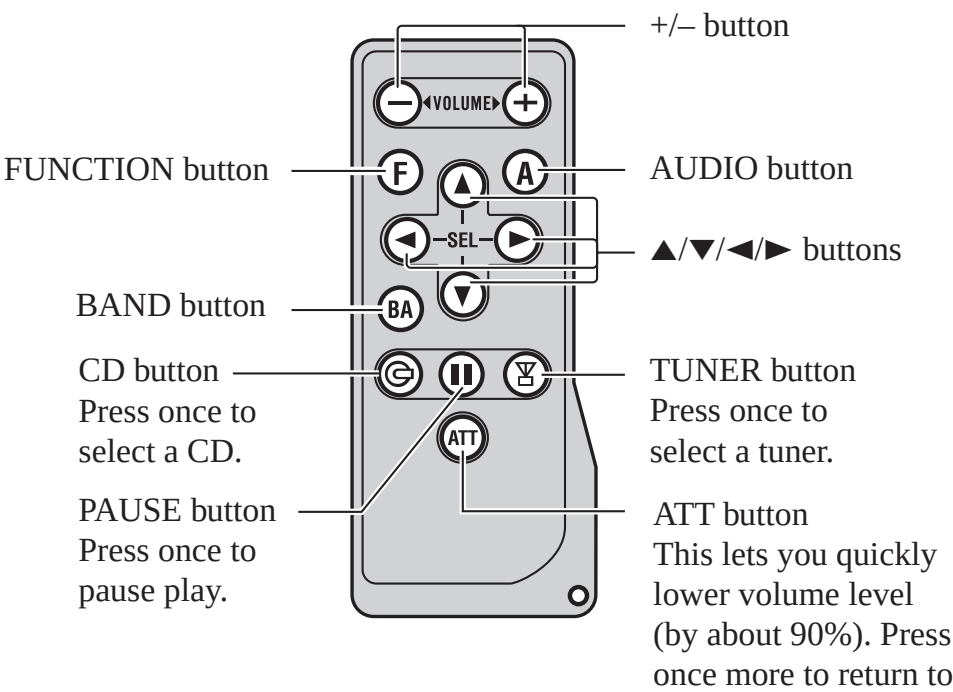
8. OPERATIONS AND SPECIFICATIONS

8.1 OPERATIONS



Remote Controller (DEH-P410, DEH-P4100)

DEH-P410 and DEH-P4100 are equipped with a remote controller for convenient operation.
Operation is the same as when using buttons on the head unit.



Basic Operation

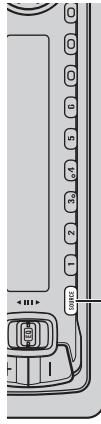
To Listen to Music

The following explains the initial of operations required before you can listen to music.

Note:

- Loading a disc in this product.

1. Select the desired source (e.g. Tuner).



Each press changes the Source ...

■ Head Unit

Each press of the SOURCE button selects the desired source in the following order:

Built-in CD player → Tuner → Multi-CD player → External Unit → AUX

■ Remote Controller (DEH-P410)

Each press of the button selects the desired source in the following order:

TUNER button : Tuner → Sources OFF

CD button : Built-in CD player → Multi-CD player → Sources OFF

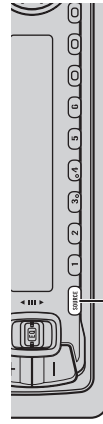
Note:

- External Unit refers to a Pioneer product (such as one available in the future) that, although incompatible as a source, enables control of basic functions by this product. Only one External Unit can be controlled by this product.
- In the following cases, the sound source will not change:
 - * When a product corresponding to each source is not connected to this product.
 - * No disc is set in this product.
 - * No magazine is set in the Multi-CD player.
 - * AUX (external input) is set to OFF.
- When this product's blue/white lead is connected to the car's Auto-antenna relay control terminal, the car's Auto-antenna extends when this product's source is switched ON. To retract the antenna, switch the source OFF.

2. Raise or lower the volume.



3. Turn the source OFF.



Hold for 1 second

Basic Operation of Tuner

Manual and Seek Tuning

- You can select the tuning method by changing the length of time you press the ◀/▶ button.

Manual Tuning (step by step)	0.5 seconds or less
Seek Tuning	0.5 seconds or more

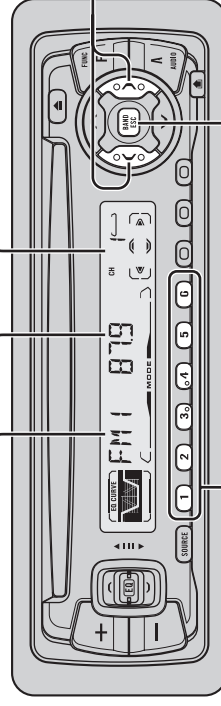
Note:

- If you continue pressing the button for longer than 0.5 seconds, you can skip broadcast stations. Seek Tuning starts as soon as you release the button.
- Stereo indicator "Ⓢ" lights when a stereo station is selected.

Frequency Indicator

Band Indicator

Preset Number Indicator



Preset Tuning

- You can memorize broadcast stations in buttons 1 through 6 for easy, one-touch station recall.

Preset station recall	2 seconds or less
Broadcast station preset memory	2 seconds or more

Note:

- Up to 18 FM stations (6 in FM1, FM2 and FM3) and 6 AM stations can be stored in memory.
- You can also use the ▲ or ▼ buttons to recall broadcast stations memorized in buttons 1 through 6.

Band
FM 1 → FM 2 → FM 3
→ AM

Basic Operation of Built-in CD Player

Switching the Display

Each press of the DISPLAY button changes the display in the following order:
→ Disc Title

Note:

- If you switch displays when disc titles have not been input, "NO TITLE" is displayed.

Eject

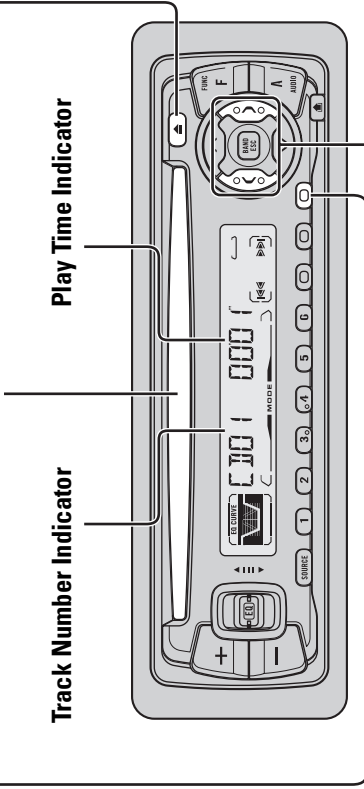
Note:

- The CD function can be turned ON/OFF with the disc remaining in this product.
- A disc left partially inserted after ejection may incur damage or fall out.

Disc Loading Slot

Note:

- The Built-in CD player plays one standard 12 cm or 8 cm (single) CD at a time. Do not use an adapter when playing 8 cm CD.



Track Search and Fast Forward/Reverse

- You can select between Track Search or Fast Forward/Reverse by pressing the ◀/▶ button for a different length of time.

Track Search	0.5 seconds or less
Fast Forward/Reverse	Continue pressing

Note:

- If a disc cannot be inserted fully or playback fails, make sure the recorded side is down. Press the EJECT button and check the disc for damage before reinserting it.
- If a CD is inserted with the recorded side up, it will be ejected automatically after a few moments.
- If the Built-in CD player cannot operate properly, an error message (such as "ERROR-14") appears on the display.
- The Built-in CD player is not equipped with CD TEXT function.
- A CD TEXT disc is a CD featuring recorded text information such as Disc Title, Artist Name and Track Title.

Basic Operation of Multi-CD Player

This product can control a Multi-CD player (sold separately).

Track Search and Fast Forward/Reverse

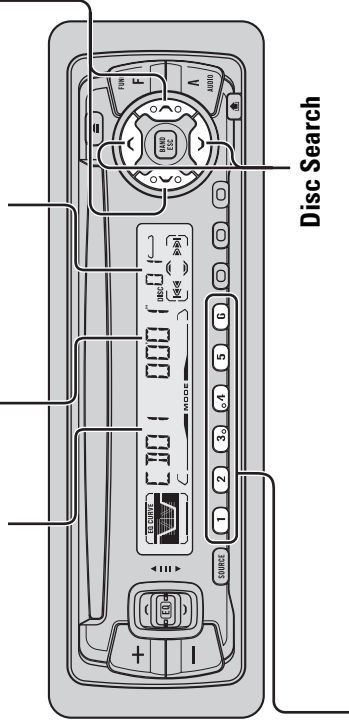
- You can select between Track Search or Fast Forward/Reverse by pressing the ◀/▶ button for a different length of time.

Track Search	0.5 seconds or less
Fast Forward/Reverse	Continue pressing

Play Time Indicator

Track Number Indicator

Disc Number Indicator



Disc Number Search (for 6-Disc, 12-Disc types)

- You can select discs directly with the 1 to 6 buttons. Just press the number corresponding to the disc you want to listen to.

Note:

- When a 12-Disc Multi-CD Player is connected and you want to select disc 7 to 12, press the 1 to 6 buttons for 2 seconds or longer.

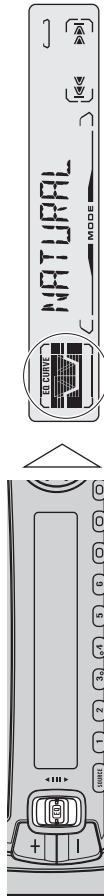
Note:

- The Multi-CD player may perform a preparatory operation, such as verifying the presence of a disc or reading disc information, when the power is turned ON or a new disc is selected for playback. "READY" is displayed.
- If the Multi-CD player cannot operate properly, an error message such as "ERROR-14" is displayed. Refer to the Multi-CD player owner's manual.
- If there are no discs in the Multi-CD player magazine, "NO DISC" is displayed.

Selecting the Equalizer Curve

You can switch between Equalizer curves.

- Move the EQ button up or down to select the desired Equalizer curve.



Equalizer curve

POWERFUL ↔ NATURAL ↔ VOCAL ↔ CUSTOM ↔ EQ FLAT ↔ EQ-MID ↔ EQ-HIGH

Note:

- "CUSTOM" stores an equalizer curve you have made adjustments to.
- You can create different "CUSTOM" curves for different sources. (The Built-in CD player and Multi-CD player are set to the same Equalizer Curve Adjustment setting automatically.)

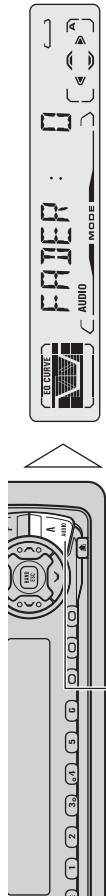
Entering the Audio Menu

With this Menu, you can adjust the sound quality.

Note:

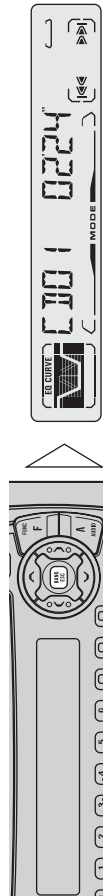
- After entering the Audio Menu, if you do not perform an operation within about 30 seconds, the Audio Menu is automatically canceled.

1. Select the desired mode in the Audio Menu.



Each press changes the Mode ...

2. Operate a mode.
3. Cancel the Audio Menu.



Audio Menu Functions

The Audio Menu features the following functions.

Balance Adjustment (FADER)

This function allows you to select a Fader/Balance setting that provides ideal listening conditions in all occupied seats.

1. Press the AUDIO button and select Fader/Balance mode (FADER) in the Audio Menu.



2. Adjust front/rear speaker balance with the ▲/▼ buttons.

"FADER : F15" – "FADER : R15" is displayed as it moves from front to rear.

3. Adjust left/right speaker balance with the ◀/▶ buttons.

"BAL : L 9" – "BAL : R 9" is displayed as it moves from left to right.

Note:

- "FADER : 0" is the proper setting when 2 speakers are in use.

Equalizer Curve Adjustment (EQ-LOW/MID/HIGH)

You can adjust the currently selected equalizer curve settings as desired. Adjusted equalizer curve settings are memorized in "CUSTOM".

1. Press the AUDIO button and select the Equalizer mode (EQ-LOW/MID/HIGH) in the Audio Menu.



2. Select the band you want to adjust with the ◀/▶ buttons.

EQ-LOW ↔ EQ-MID ↔ EQ-HIGH

3. Boost or attenuate the selected band with the ▲/▼ buttons.

The display shows "+6" – "-6".



Note:

- If you make adjustments when a curve other than "CUSTOM" is selected, the newly adjusted curve will replace the previous adjusted curve. Then a new curve with "CUSTOM" appears on the display while selecting the equalizer curve.

Sub-woofer Setting Adjustment (80HZ) (DEH-P410)

When the Sub-woofer output is ON, you can adjust the output level of Sub-woofer.

1. Press the **AUDIO** button and select the **Sub-woofer setting mode (80HZ)** in the **Audio Menu**.

2. Increase or decrease the output level with the **▲/▼** buttons.

The display shows “+ 6” – “- 6”.

Note:

- You can select the Sub-woofer setting mode only when Sub-woofer output is switched ON in the Sub-woofer ON/OFF mode.



Front Image Enhancer Function (FIE)

The F.I.E. (Front Image Enhancer) function is a simple method of enhancing front imaging by cutting mid- and high-range frequency output from the rear speakers, limiting their output to low-range frequencies. You can select the frequency you want to cut.

Precaution:

- When the F.I.E. function is deactivated, the rear speakers output sound of all frequencies, not just bass sounds. Reduce the volume before disengaging F.I.E. to prevent a sudden increase in volume.

1. Press the **AUDIO** button and select the **F.I.E. mode (FIE)** in the **Audio Menu**.

2. Switch the F.I.E. function ON/OFF with the **▲/▼** buttons.



“FIE”

3. Select the desired frequency with the **◀/▶** buttons.

100 ↔ 160 ↔ 250 (Hz)



Note:

- After switching the F.I.E. function ON, select the Fader/Balance mode in the Audio Menu, and adjust front and rear speaker volume levels until they are balanced.
- Switch the F.I.E. function OFF when using a 2-speaker system.

Source Level Adjustment (SLA)

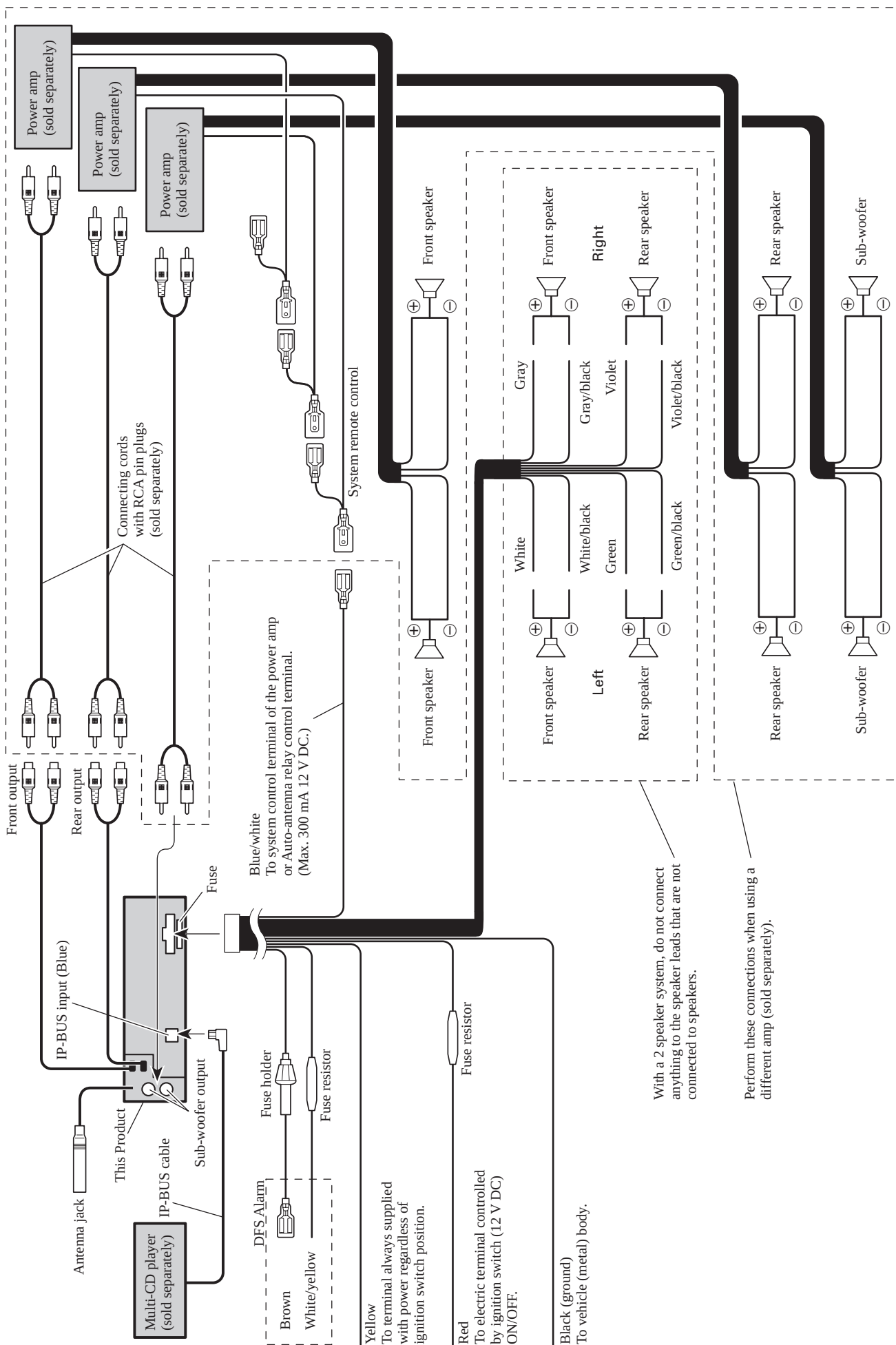
The SLA (Source Level Adjustment) function prevents radical leaps in volume when switching between sources. Settings are based on the FM volume, which remains unchanged. (Since the FM volume is the control, SLA is not possible in the FM modes.) The AM, CD, External Unit and AUX levels can all be adjusted.

The Built-in CD player and Multi-CD player are set to the same volume adjustment setting automatically.

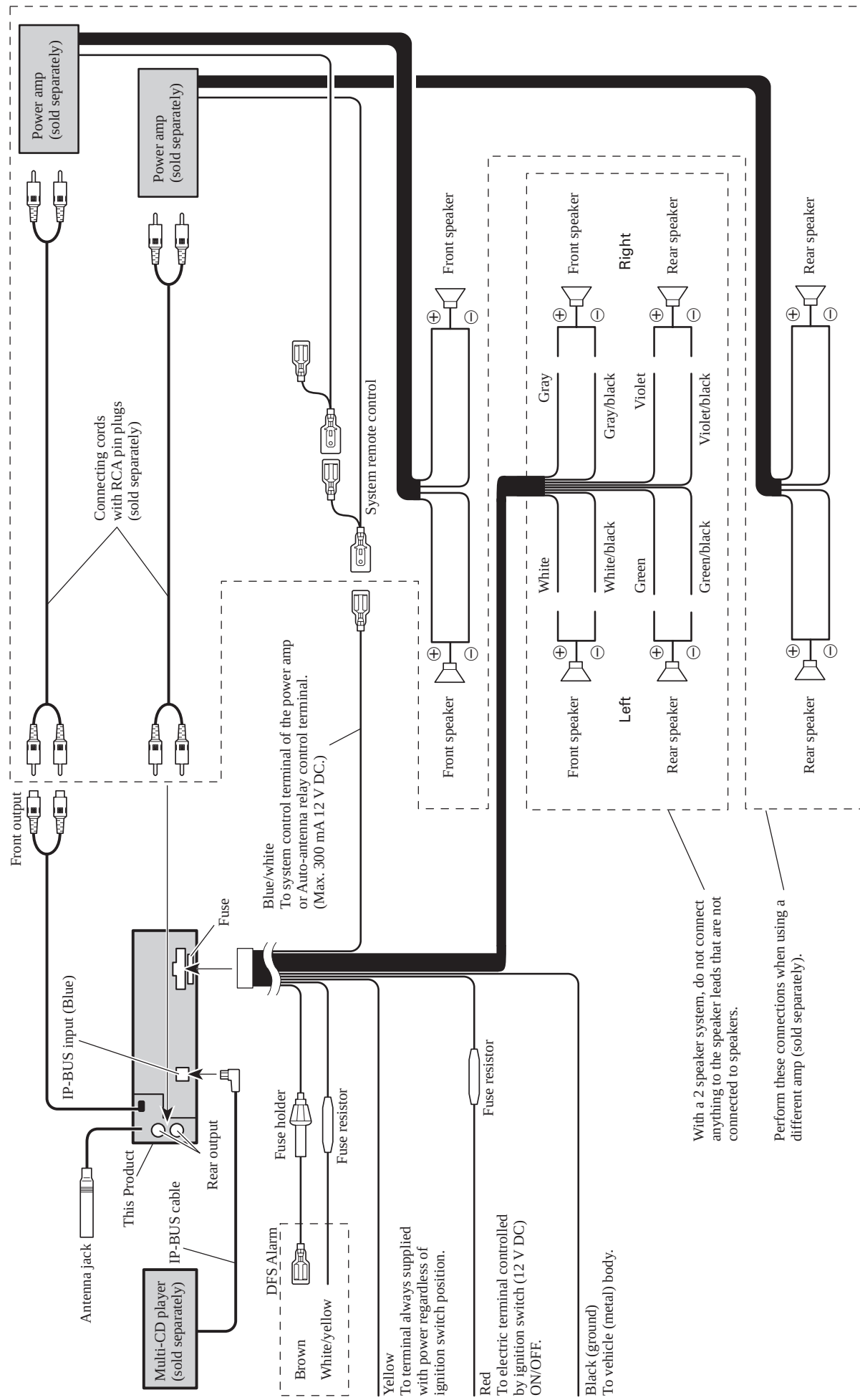
1. Compare the **FM volume with the volume of the other source.** (e.g. Built-in CD player)
2. Press the **AUDIO** button and select the **SLA mode (SLA)** in the **Audio Menu**.
3. Increase or decrease the level with the **▲/▼** buttons.
The display shows “+4” – “-4”.



● DEH-P410/X1N/UC



DEH-P410,P4100,P310



8.2 SPECIFICATIONS

General

Power source	14.4 V DC (10.8 – 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Dimensions	
(DIN) (chassis)	178 (W) × 50 (H) × 159 (D) mm [7 (W) × 2 (H) × 6-1/4 (D) in]
(nose)	188 (W) × 58 (H) × 19 (D) mm [7-3/8 (W) × 2-1/4 (H) × 3/4 (D) in]
(D) (chassis)	178 (W) × 50 (H) × 164 (D) mm [7 (W) × 2 (H) × 6-1/2 (D) in]
(nose)	170 (W) × 48 (H) × 14 (D) mm [6-3/4 (W) × 1-7/8 (H) × 5/8 (D) in]
Weight	1.5 kg (3.3 lbs)

Amplifier

Continuous power output is 22 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.	
Maximum power output	45 W × 4
Load impedance	4 Ω (4 – 8 Ω allowable)
Preout maximum output level/ output impedance	2.2 V/1 kΩ
Equalizer (3-Band Parametric Equalizer)	
(Low)	Frequency: 40/80/100/160 Hz Q Factor: 0.35/0.59/0.95/1.15 (+6 dB when boosted) Level: ±12 dB
(Mid)	Frequency: 200/500/1k/2k Hz Q Factor: 0.35/0.59/0.95/1.15 (+6 dB when boosted) Level: ±12 dB
(High)	Frequency: 3.15k/8k/10k/12.5k Hz Q Factor: 0.35/0.59/0.95/1.15 (+6 dB when boosted) Level: ±12 dB
Loudness contour	
(Low)	+3.5 dB (100 Hz), +3 dB (10 kHz)
(Mid)	+10 dB (100 Hz), +6.5 dB (10 kHz)
(High)	+11 dB (100 Hz), +11 dB (10 kHz) (volume: -30 dB)
Sub-woofer output (DEH-P410)	
Frequency	80 Hz
Slope	-12 dB/oct.
Gain	±12 dB

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format	Sampling frequency: 44.1 kHz Number of quantization bits: 16; linear
Frequency characteristics	5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IHF-A network)
Dynamic range	92 dB (1 kHz)
Number of channels	2 (stereo)

FM tuner

Frequency range	87.9 – 107.9 MHz
Usable sensitivity	10 dBf (0.9 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	15 dBf (1.5 μV/75 Ω, mono)
Signal-to-noise ratio	70 dB (IHF-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 – 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)
Selectivity	70 dB (2ACA)
Three-signal intermodulation (desired signal level)	30 dBf (two undesired signal level: 100 dBf)

AM tuner

Frequency range	530 – 1,710 kHz
Usable sensitivity	18 μV (S/N: 20 dB)
Selectivity	50 dB (±10 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.